

Comprehensive Plan

Cass County, Indiana



ADOPTED July 2009





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Cass County, with assistance from the Indiana Office of Community and Rural Affairs, has prepared a comprehensive plan with input from the public. Logansport has been preparing a comprehensive plan for its planning jurisdiction concurrently with the county's planning process.



Chapter 1: Information





Cass County Indiana

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Where should Cass County grow? What kind of growth do we want in our community? The questions as to location and type of growth are two that will be considered as a part of this plan.

Grant requirements

Cass County received a community planning grant from the Indiana Office of Community and Rural Affairs to fund the comprehensive plan. The requirements for the grant primarily focus on meeting the requirements for a comprehensive plan put forth in Indiana Code 36-7-4-502, which are:

1. The plan must include a statement of objectives for the future development of the county
2. The plan must include a statement of policy for the land use development of the county
3. The plan must include a statement of policy for the development of public ways, places, lands, structures, and utilities.

This plan addresses each of these minimum criteria and has additional elements that are permitted in Indiana Code 36-7-4-503.

Public involvement

This plan is your plan. Public involvement is a critical component of developing a comprehensive plan, not only to meet state legal requirements, but to ensure the plan is implemented by reflecting input of local residents and business owners about the future of their community. As a result, extensive efforts were made during the process to include wide representation from throughout the county.

In the early stages of the comprehensive plan process, the consultant team met with a steering committee made up of local residents, leaders, and business owners. This committee acted as a sounding board for the consultant team in developing ideas. The team also met with several individuals to discuss their concerns and ideas for improvement.

Public Workshops-in-a-Box™ were available throughout the county for people to participate and public open houses were held in Walton and in Twelve Mile to allow residents an opportunity to share their thoughts.



The steering committee worked with the consultant team to develop a future land use map, future transportation map, and objectives for meeting the goals identified earlier. Focus groups met to provide input for the sub-area plans.

A draft plan was produced and reviewed by the steering committee. The plan was then presented to the Plan Commission at a public hearing and a recommendation was forwarded to the County Commissioners for approval of the plan.

Planning is not zoning

The comprehensive plan is a policy document that conveys the community’s vision for itself and the ways in which the community will achieve the vision. It has recommendations and action plans that provide direction to the plan commission members and the county commissioners when they are making land use decisions. The goals, recommendations, and future land use map need to be consulted and factored into land use decisions, but **the plan is not the law governing land use in the county. The law is what is contained in the zoning ordinance.** The regulations in the zoning ordinance are not optional and can only be changed by ordinance.

The plan is a dynamic, living document that can be amended (through public hearing, plan commission recommendation, and approval of the county commissioners) as the circumstances in the county change

or to adjust for an unforeseen opportunity available to the county. This does not mean that the plan is meaningless and applies only to “right now,” rather it acknowledges that there are changes and opportunities that cannot be anticipated and may alter the future of the community. These changes should be incorporated into the plan as needed, with the plan being reviewed at least every five years and updated or completely revised in twenty years.

Figure 1.1: Comprehensive Plan vs. Zoning

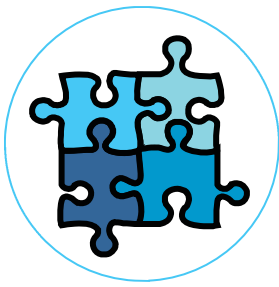
Comprehensive Plan	Zoning Ordinance
<i>Policy / Guide</i>	<i>Law</i>
<i>Shows how land should be used in the future</i>	<i>Shows how land is regulated now</i>
<i>Decision-making</i>	<i>Implementation and Enforcement</i>
<i>Adopted by resolution</i>	<i>Adopted by ordinance</i>

The community profile includes demographic and economic information about Cass County

It provides a common language for the steering committee, consulting team, and the public to use in developing the goals and objectives for the community.



Chapter 2: Community Profile



Cass County Indiana

Population data and analysis

Cass County is 412.9 square miles and is located in north-central Indiana. The county seat is Logansport. Several other incorporated communities — Galveston, Onward, Royal Center, and Walton — are located in the county and have their own town governments. There are a number of unincorporated places in Cass County, as well, including Adamsboro, Anoka, Clymers, Deacon, Georgetown, Hoover, Lake Cicott, Leases Corner, Lewisburg, Lincoln, Lucerne, Metea, New Waverly, Twelve Mile, and Young America. These places do not have a local government and are represented by the County Commissioners.

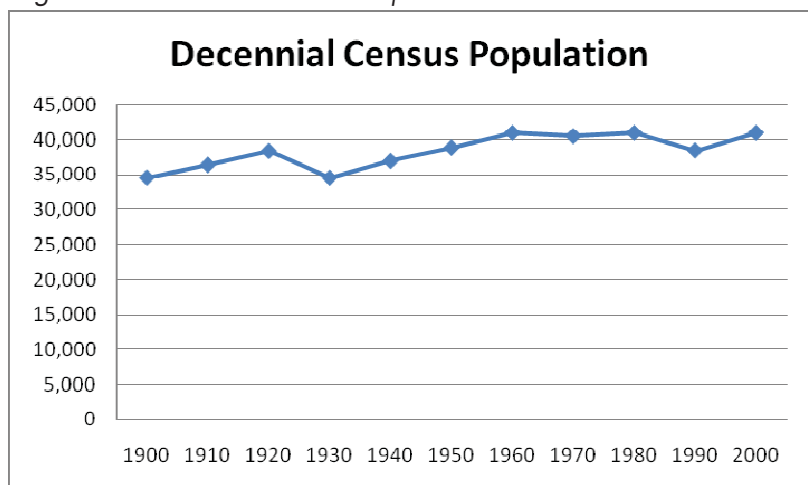
Counties adjacent to Cass County have a significant effect on the local economy, which will be discussed later. These counties include Carroll, Fulton, Howard, Miami, Pulaski, and White.

Population

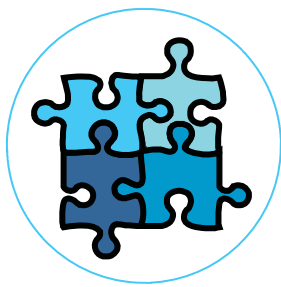
Since 1900, the Cass County population has generally experienced modest growth, with low population points in 1930 and 1990. The highest population in the county’s history occurred in 1960, when the population was 40,931. The county’s 2000 population was similar to 1960, with a population of 40,930. Logansport, the largest community in the county, contains about 48 percent of the county population or 19,684 people, according to the 2000 Census. Galveston had a population of 1,532 in 2000, while Walton had a population of 1,069. Royal Center was the next largest community with 832 residents and Onward is the smallest town in Cass County with only 81 residents.

According to estimates prepared by the US Census Bureau, all communities in Cass County have declined in population since 2000. The greatest loss, on a percentage basis, has been in Galveston (down 8.36% to

Figure 2-1: Decennial Census Population 1900-2000



Source: US Census Bureau



Cass County Indiana

1,404. The smallest loss was in Onward, with a loss of one person, or 1.32 percent of the population. Likewise, the overall population of

Figure 2-2: 2007 Population Estimate and Change Since 2000

Jurisdiction	2007 Population Estimate	Percent Change from 2000
Cass County	39,193	-4.2%
Logansport	18,743	-4.85%
Galveston	1,404	-8.36%
Onward	80	-1.23%
Royal Center	794	-4.57%
Walton	1,008	-5.71%

Source: US Census Bureau

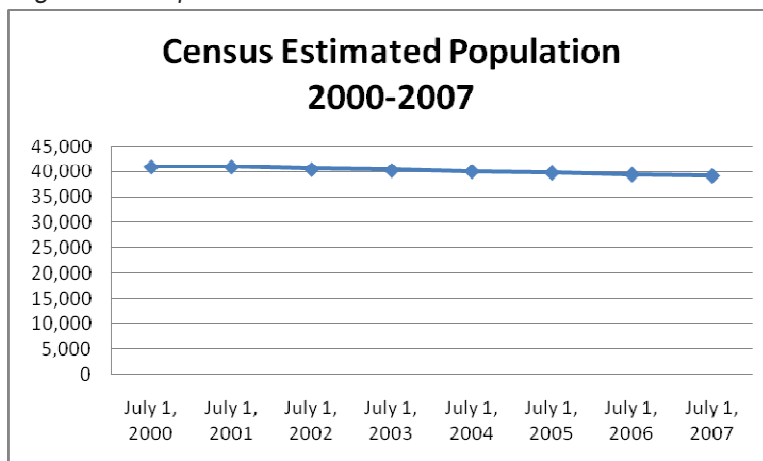
Cass County is in decline, according to these same estimates.

As seen in Figure 2-4, the population of Cass County is expected to continue to decline until 2015 and then begin a recovery that should last many years. The comprehensive plan is considering a roughly 20 year horizon and will use the 2030 population projections as a basis for decision making in the plan. The projected population for the county in 2030 is 39,798, slightly larger than the current estimate, but still lower than the 2000 figure. The lowest population is

anticipated to be 38,388 in 2015, or roughly 800 people less than in 2007.

The population in 2030 is projected to be older. There will be fewer school aged children and a larger older adult and senior population in the county. This age shift has implications for housing, schools, and transportation, as well as recreation and other community services.

Figure 2-3: Population Estimates 2000-2007



Source: US Census Bureau

Educational Attainment

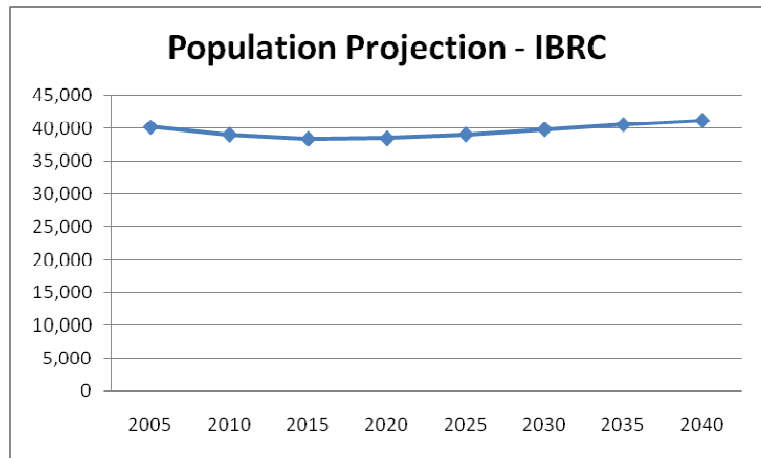
Educational attainment of the adult population is one measure used when businesses are considering locating in a community and can be an important economic development statistic. In 2000, the educational attainment of adults over age 25 in Cass County was lower than the statewide average. Only 12 percent of adults over age 25 had college degrees, compared with 19 percent statewide. Galveston had the highest educational attainment of the incorporated communities, with 13 percent of adults having a college degree. Fewer than 10 percent of the adults in Logansport, Onward, and Royal Center had college degrees in 2000. In Onward only 71 percent of adults over age 25 had completed high school. There is a possibility that the educational attainment numbers for the county will improve with the 2010 Census and future Census' due to better access to education and higher education, particularly for women.

Educational Performance

While educational attainment demonstrates what adults have accomplished in terms of education, educational performance provides a look at how the current students – tomorrow’s workforce – are being educated.

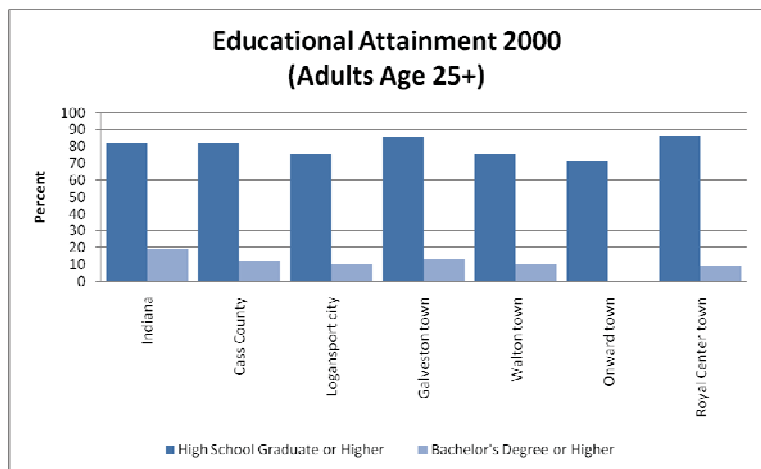
There are eight public elementary schools in Cass County, distributed among four school districts. Most of the elementary schools have approximately 500 students. The largest elementary school is Landis

Figure 2-4: Population Projections 2005-2040

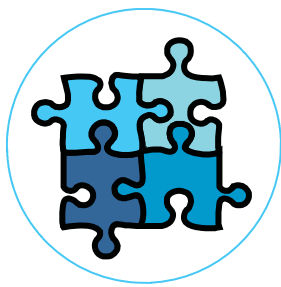


Source: Indiana Business Research Center

Figure 2-5: Educational Attainment of Adults Over Age 25



Source: US Census Bureau

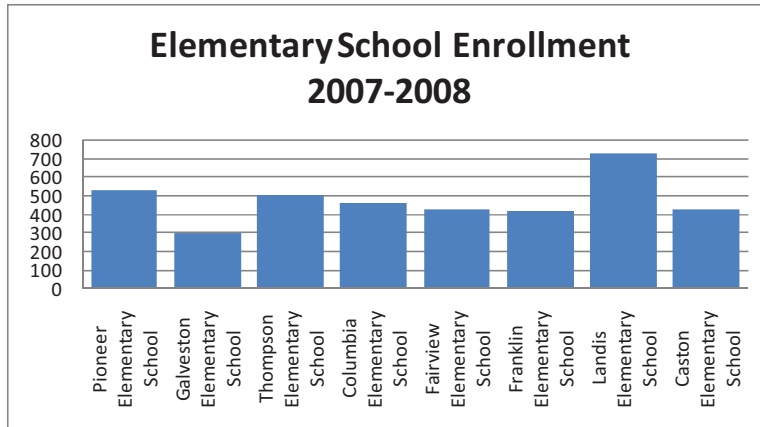


Cass County Indiana

Elementary School in Logansport with enrollment of 729 students for

2007-2008. The smallest elementary school is Galveston Elementary in the Southeastern district was 299 for 2007-2008.

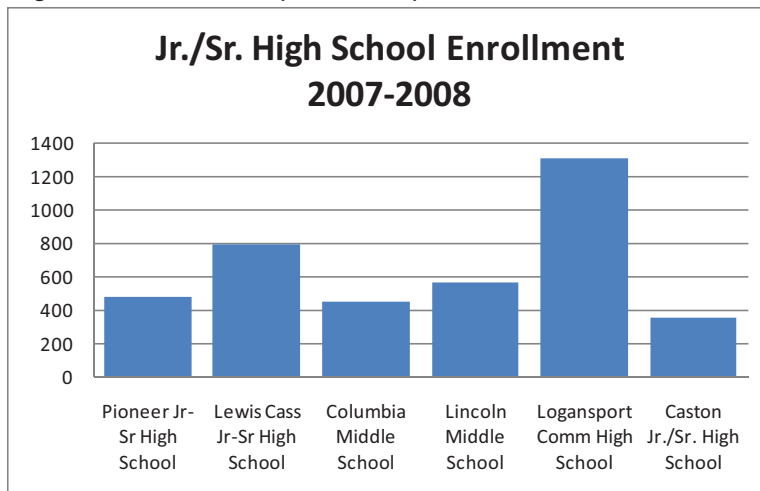
Figure 2-6: Cass County Elementary School Enrollment 2007-



Source: Indiana Department of Education

There are three junior/senior high schools, two middle schools, and a high school in the county's public school districts. Logansport Community High School is the largest of the secondary schools with an enrollment of 1,308 in 2007-2008.

Figure 2-7: Cass County Secondary School Enrollment 2007-

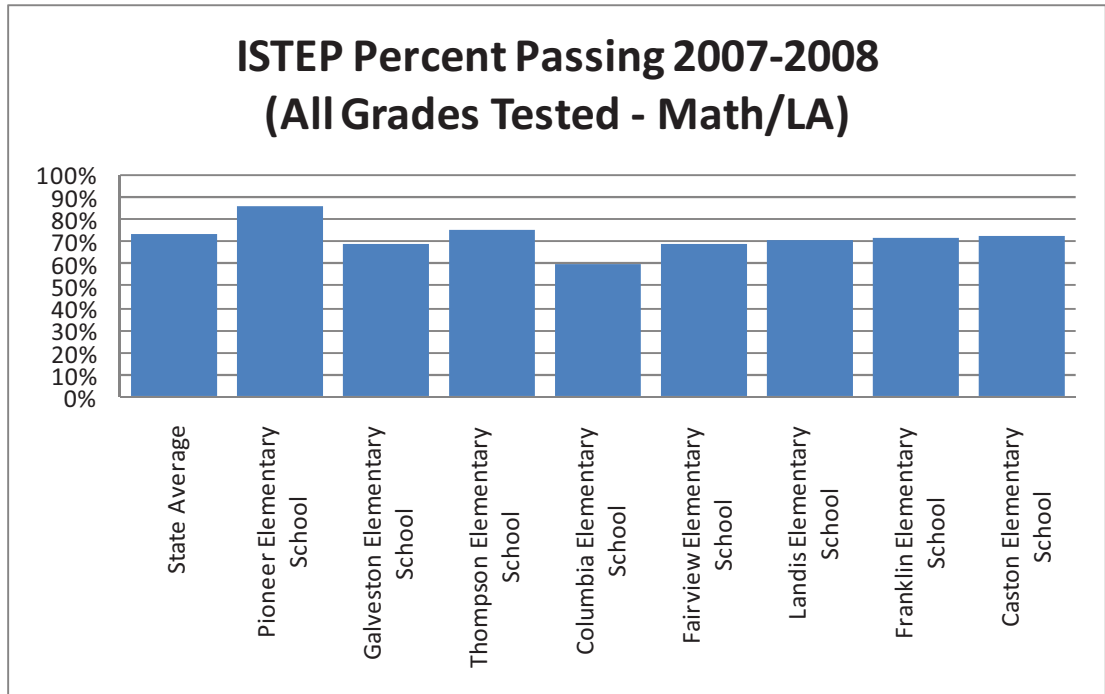


Source: Indiana Department of Education

In terms of performance, the ISTEP test is the key measure in Indiana. The most commonly used measure is the percent of students passing both math and language arts portions of the exam for all tested grades. Pioneer Elementary and Thompson Elementary had a higher percentage passing the ISTEP in both math and language arts for all tested grades in 2007-2008 than the statewide average. Performance, however, has fluctuated from year to year for most of the elementary schools.

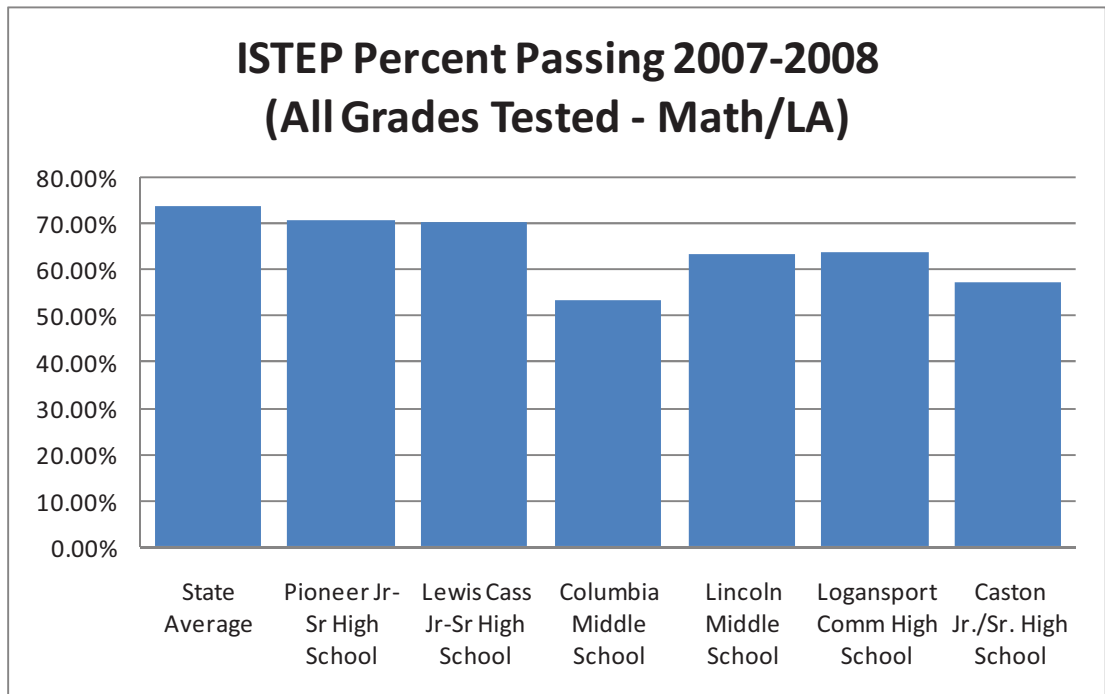
At the high school level, countywide performance has been below the statewide average in math and language arts for all grades tested. Performance has fluctuated for all of the high schools.

Figure 2-8: Elementary School ISTEP Percent Passing 2007-2008

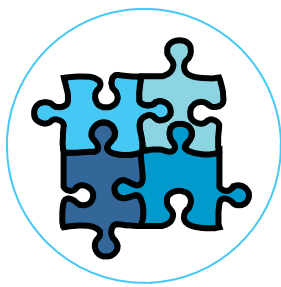


Source: Indiana Department of Education

Figure 2-9: Secondary School ISTEP Percent Passing 2007-2008



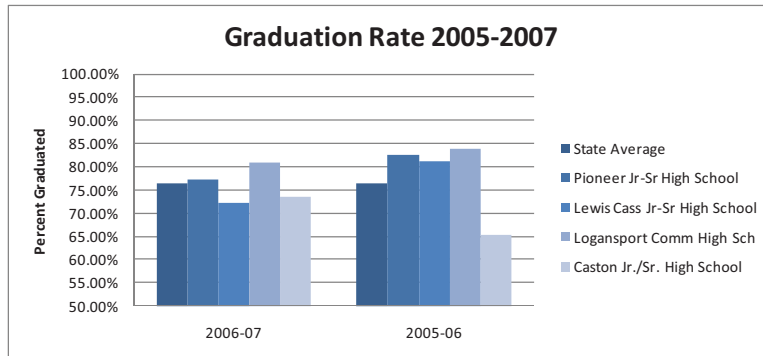
Source: Indiana Department of Education



Cass County Indiana

Graduation rates are another key performance measure. In the early 2000s the graduation rates throughout most of Cass County were above statewide averages.

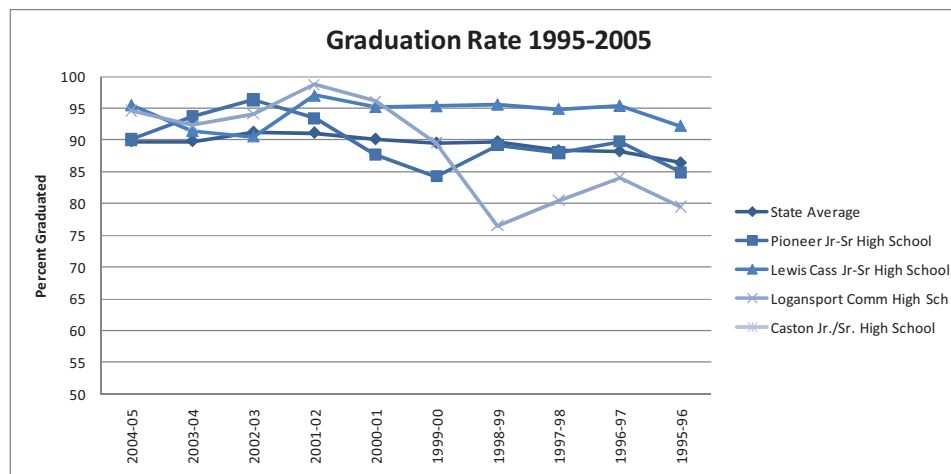
Figure 2-10: Graduation Rates 2005-2007



The general assembly and the Indiana Department of Education has changed the definition of graduation a few times recently and under the new definition graduation rates are at or above the statewide rate for all schools except Lewis Cass Jr./Sr. High and Caston Jr./Sr. High.

Source: Indiana Department of Education

Figure 2-11: Graduation Rates 1995-2005

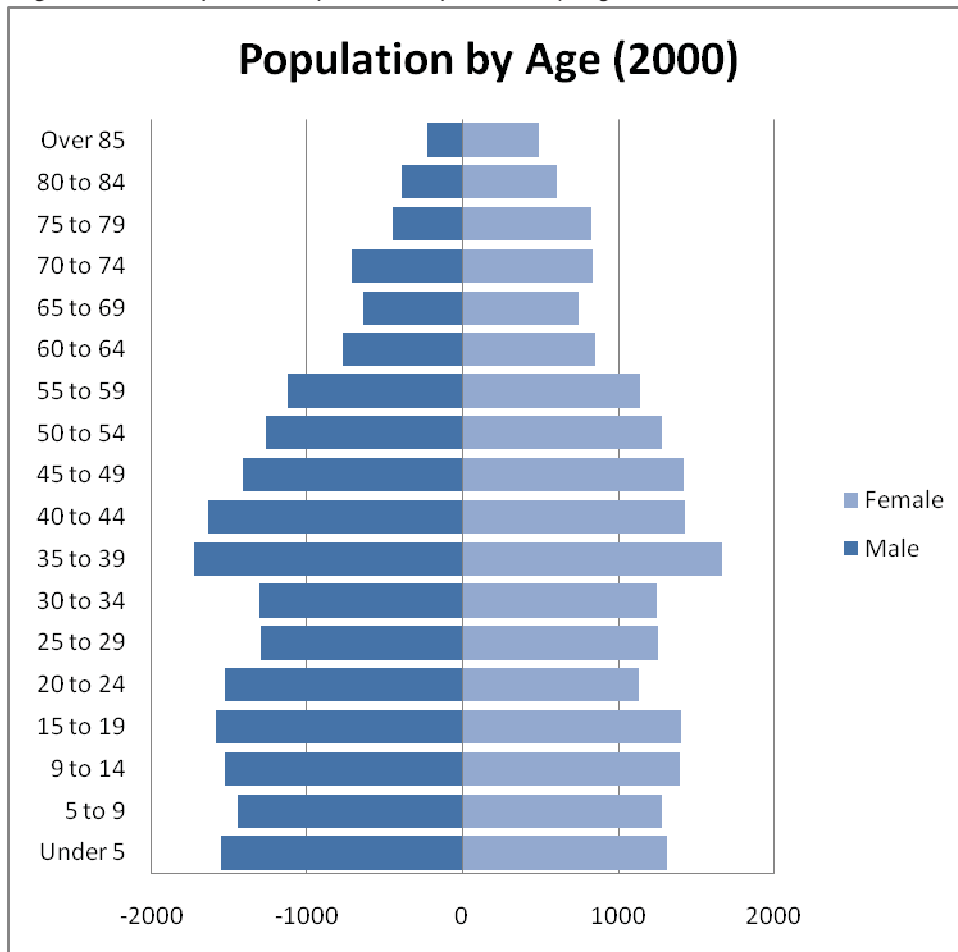


Source: Indiana Department of Education

Age

The population pyramid for Cass County, which demonstrates age and gender at a single point in time, is typical of most Indiana communities. The pyramid on the following page is based on the 2000 Census. In the 2010 Census the shape of the pyramid will change as the Baby Boom population ages. The number of people moving into the 65+ age groups now and in years to come is larger than previous (and later) groups. Improved healthcare and increased access to healthcare will improve longevity of this group. Women will

Figure 2-12: Population Pyramid (Population by Age) in 2000



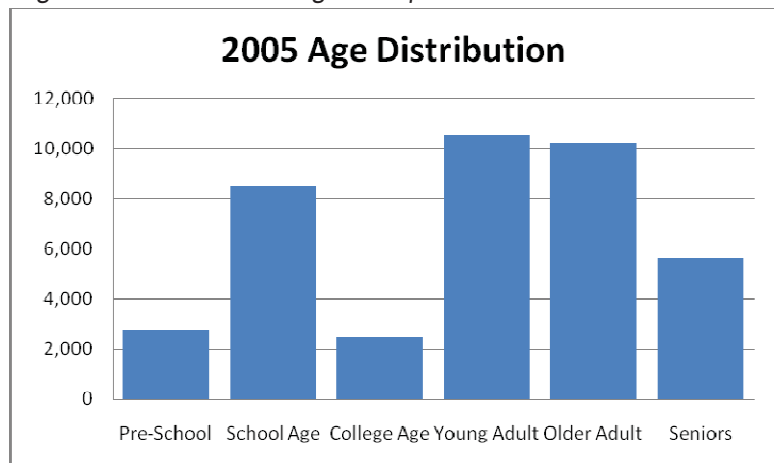
Source: US Census Bureau

continue to comprise a larger proportion of this cohort, as women tend to outlive men.

Functional Age Groups

There are currently a large number of older adults in the workforce (age 44 to 65) who will be retiring in the next several years, creating a significant increase in the number of senior citizens in the county by

Figure 2-13: Functional Age Groups in 2000



Source: US Census Bureau

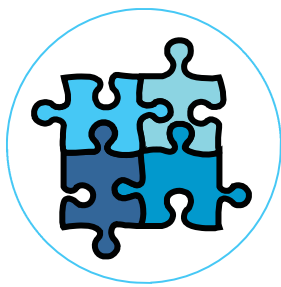
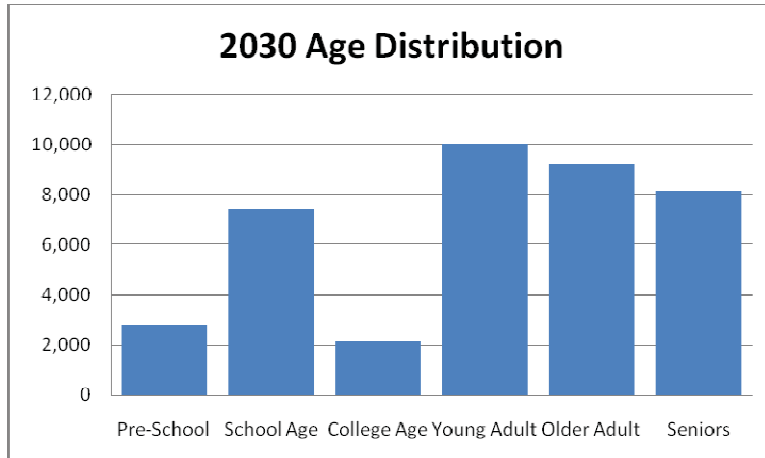


Figure 2-14: Projected Age Distribution for 2030



Source: Indiana Business Research Center

2030. The school age population is expected to decline by 2030 and few college age people live in Cass County, which is not projected to change. See Figure 2-14.

Race and Ethnicity

Cass County changed significantly between 1990 and 2000, and may be continuing to experience demographic change. While 94 percent of people in Cass County identified themselves as Caucasian in 2000, compared with 87 percent statewide, the county has experienced significant growth in the Hispanic population. In 2000, seven percent of Cass County residents identified themselves as being of Hispanic origin. This was an increase of 2,680 Hispanic people over the 1990 population. Not only has Cass County experienced significant growth in the Hispanic population, it has a relatively large Hispanic population as a percent of total population (7 percent), compared to the statewide average (3 percent).

Housing data analysis

Like other Indiana communities, there has been an increase in the number of housing units in the county, despite a declining population in the past few years. In Cass County there has been a four percent

decline in population with a three percent increase in the number of housing units. One of the primary drivers of this movement is the decline in household size that has been occurring over the past several decades.

In 2000 the housing vacancy rate in Cass County was approximately six percent, considered “normal.” A modest vacancy rate allows for housing turnover and opportunities for people relocating to the community. In the past few years, however, foreclosures have been an issue in several Indiana communities and anecdotal evidence suggests Cass County has not been immune from this situation. Hence, housing growth can be expected to slow for a few years while the available housing stock is absorbed, particularly with the projected population decline and nationwide economic downturn.

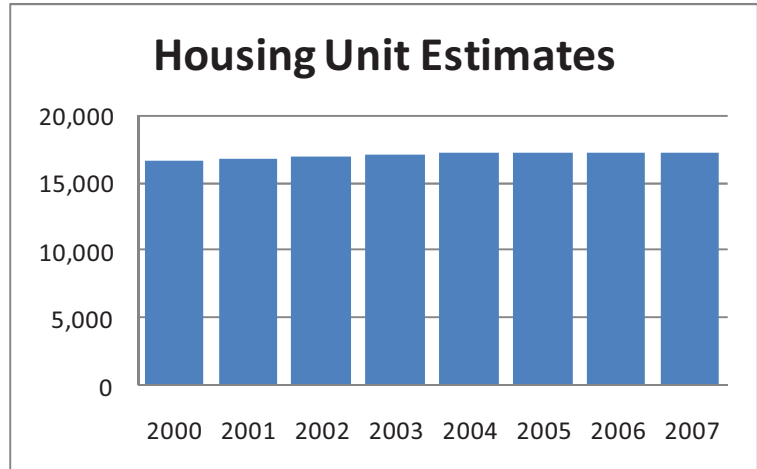
Building Permits

Building permits are another way to consider the housing growth in a community. Nearly all of the new residential building permits issued in Cass County from 1990 to 2007 were for single family homes. No multi-family dwellings (apartments or senior housing) have been built since 1990. The county averaged just under 70 new residential construction permits per year since 1990. However, this has dramatically declined since 2005, reflecting the national economic and housing crisis.

Employment issues and factors

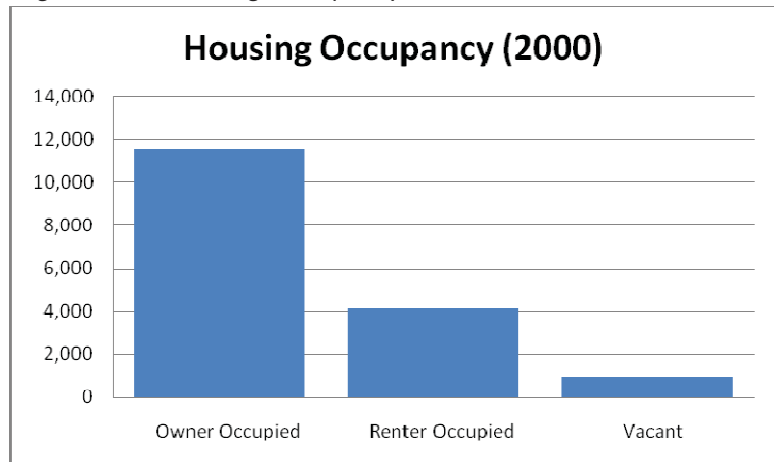
Employment and Economy

Figure 2-15: Housing Unit Estimates 2000-2007

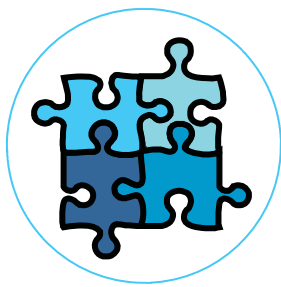


Source: Indiana Business Research Center

Figure 2-16: Housing Occupancy 2000



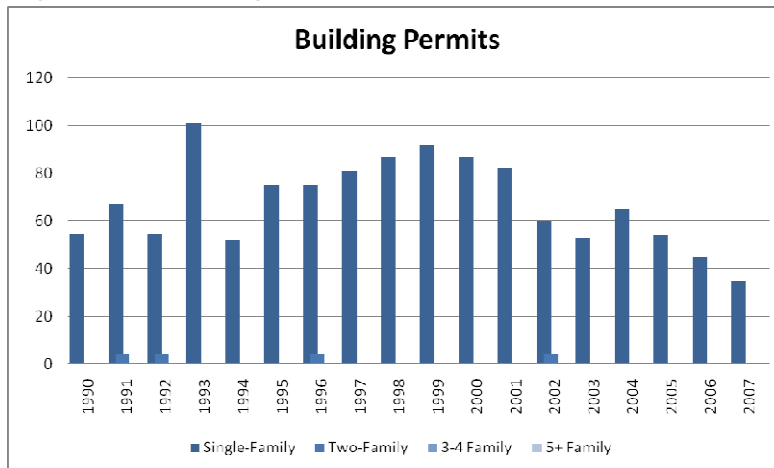
Source: US Census Bureau



Cass County Indiana

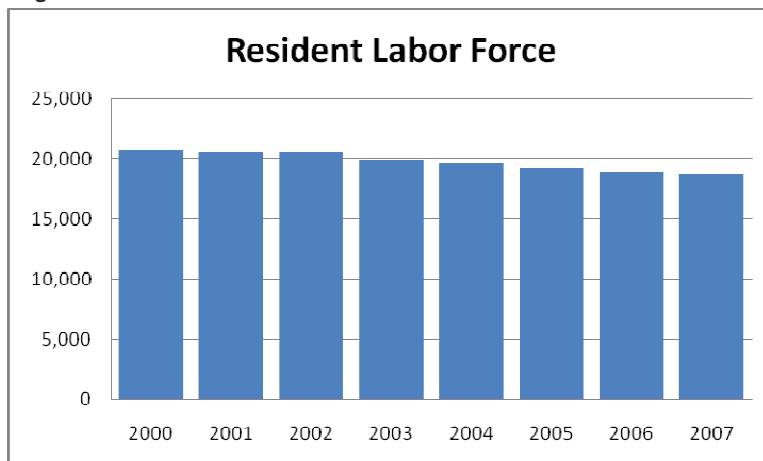
Labor force, sometimes called the resident labor force, is the number of workers who live in the county regardless of where they work. The

Figure 2-17: Building Permits 1990-2007



Source: Indiana Business Research Center

Figure 2-18: Resident Labor Force 2000 –2007



Source: US Bureau of Labor Statistics, Indiana Business Research Center

resident labor force in Cass County has been shrinking since 2000, in 2007 the labor force was 18,733, down from 20,771 in 2000.

The resident labor force includes the people who are working and those who are unemployed but actively seeking employment. Sometimes people drop out of the labor force when they don't have a job because they are no longer seeking employment (decided to retire, given up on finding a job, etc.).

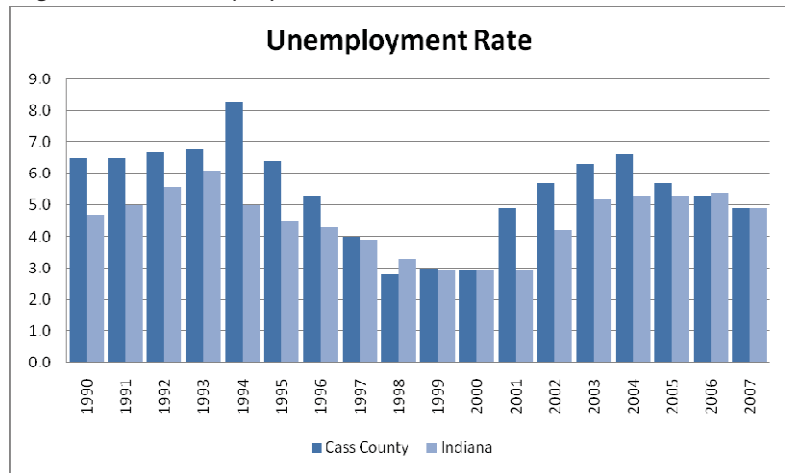
The unemployment rate in Cass County has tended to be higher than the statewide average over time and appears to be more sensitive to economic downturns than the statewide average. This is due, in part, to the heavy concentration of manufacturing as the employment sector for many Cass County workers. The higher unemployment rate in Cass County in recent years is consistent with national trends and is not as severe as the downturn in the early 1990s.

One group of workers not represented in the unemployment rate are those workers who are underemployed (in jobs below their previous pay or skill level) due to changes in the economy and layoffs, particularly in manufacturing. These statistics are not collected by the government, but underemployment studies are sometimes conducted by economic development organizations to show latent labor availability to prospective businesses.

Employment by Industry

Manufacturing is by far the largest employment sector in Cass County. However, manufacturing employment has declined significantly in the county since 2001, with a loss of 1,333 jobs. Manufacturing is not responsible for all of the job loss in the county, however. Total employment is down more than manufacturing employment, other sectors are generally losing jobs as well as not replacing manufacturing jobs. The only real increase in employment has been in the local government and service sectors.

Figure 2-19: Unemployment Rate



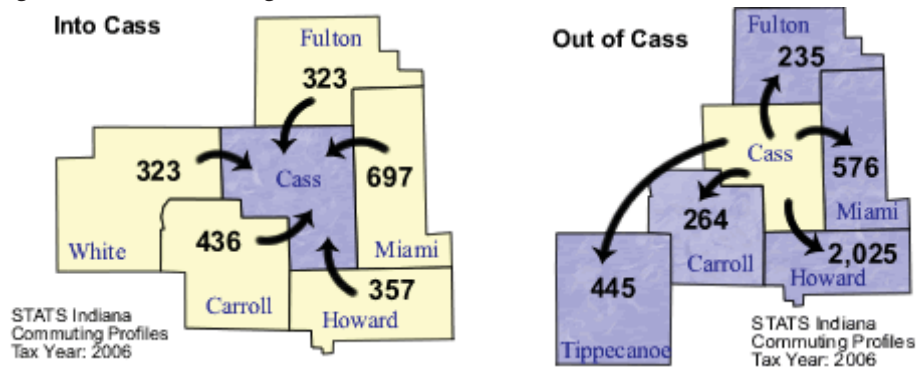
Source: US Bureau of Labor Statistics, Indiana Business Research Center

Commuting Patterns

Commuting patterns reveal information about employment and the transportation network needs by showing where workers at local businesses live and where local residents work. Cass County loses more workers to other counties than it brings in from other counties. In other words, the county exports workers every day.

Not surprising, the largest outflow of workers is to Howard County

Figure 2-20: Commuting Patterns 2006



Source: Indiana Department of Revenue, Indiana Business Research Center

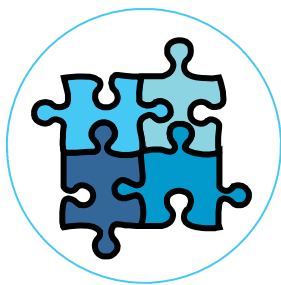
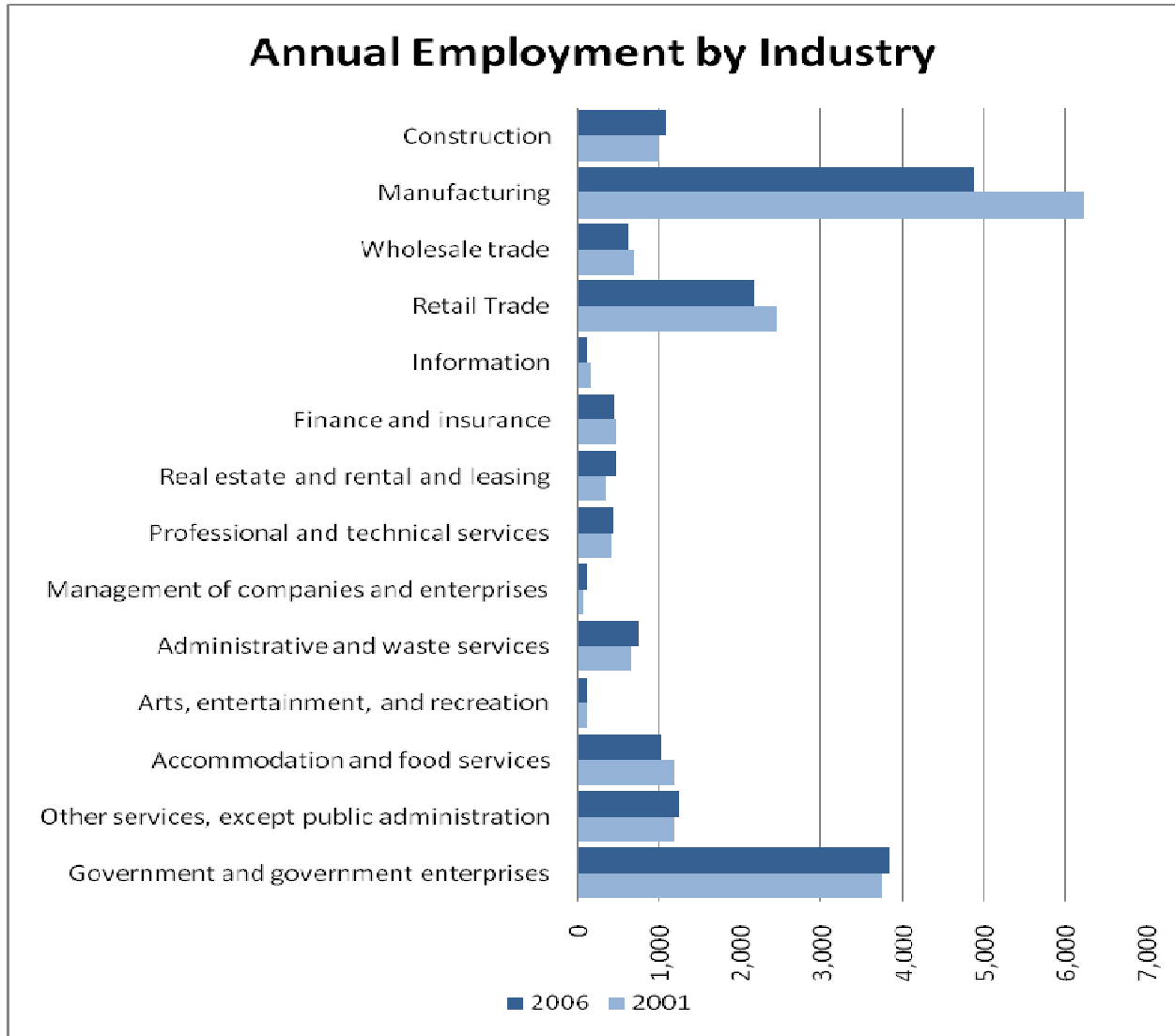


Figure 2-21: Annual Employment by Industry 2001 and 2006



Source: US Bureau of Economic Analysis, Indiana Business Research Center

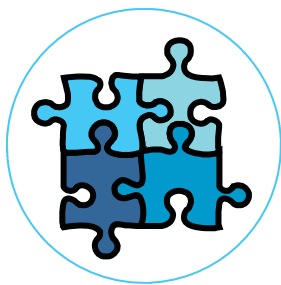
(Kokomo). Anecdotal evidence suggests that the southern areas of Cass County (particularly Galveston) are more aligned with Kokomo because Kokomo is closer than Logansport and many people in the area work and shop in Kokomo.

Cass County does import some workers from adjacent counties, particularly rural counties like Carroll, White, and Fulton.

Figure 2-22: Top Employers in Cass County

	Industry:	Product:	Employment:
1	Tyson Foods, Inc.	Meat Packing	1707
2	Logansport School Corporation	Education	852
3	Logansport State Hospital	In-Patient Psychiatric Care	783
4	Logansport Memorial Hospital	Regional Medical Center	609
5	Federal-Mogul	Auto Electronic Components	402
6	Kauffman	Electrical Wiring Systems	360
7	Materials Processing	Metal Stampings	337
8	City of Logansport / LMU	Government / Municipal Utility	304
9	Cass County Government	Government	300
10	Tinnerman-Palnut	Metal Stampings	245
11	Southeastern School Corporation	Education	223
12	Matthew-Warren	Precision Mechanical Springs and Stampings	220
13	Peak Community Services	Social Services	198
14	Four County Counseling Center	Behavioral Health Facility	170
15	Carlisle Industrial Brake & Friction	Friction Materials / Clutch	150
16	Total Electronics	Custom Design Electronic Controls	144
17	Modine Mfg. Company	Auto Oil Coolers	135
18	SUS Cast Products	Precision Castings	117
19	ESSROC Materials	Cement Mfg. / Masonry Products	105
20	Pharos Tribune	Media / Newspaper	97

Source: Logansport Cass County Economic Development Foundation



Cass County Indiana

Top Employers

Large employers can have a significant impact on the area when they create new jobs or lay off workers, eliminating jobs. While small businesses create most of the new jobs in the community in aggregate, the large employers can have a more dramatic impact in a short period of time. The largest employers (Figure 2-22) in Cass County are Tyson Foods, the Logansport School Corporation, the Logansport State Hospital, and Logansport Memorial Hospital. Government, health, and food related businesses are generally considered to be more stable in the current economy than auto manufacturers or suppliers, so the economic base of the community should be relatively stable.

Agriculture

Agriculture is very important to Cass County in terms of land area, community identity, and economic opportunities, though farm employment has declined in recent years. Farm employment in 2006 was 872, a decline of six percent over 2001.

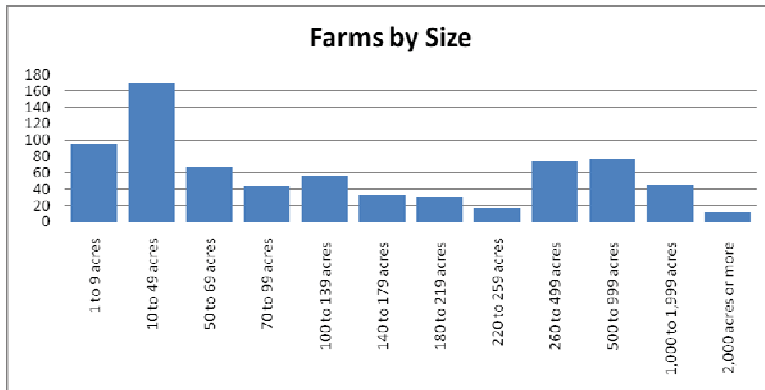
Nearly 80 percent of the land area in Cass County is in farms and farm land, and approximately 90 percent of the farm land is in crops. Most of the non-agricultural land in the county is concentrated in Logansport, the towns, and the unincorporated places. In 2002, there were 208,379 acres devoted to farming in Cass County, a decrease of approximately one percent since 1997.

The largest number of farms in the county are small farms under 50 acres. There are a few very large farms and the average farm size is increasing. From 1997 to 2002 the average farm size increased by 31 acres. Over time the county (like other agricultural counties) is experiencing fewer, larger farms with fewer overall acres in farming.



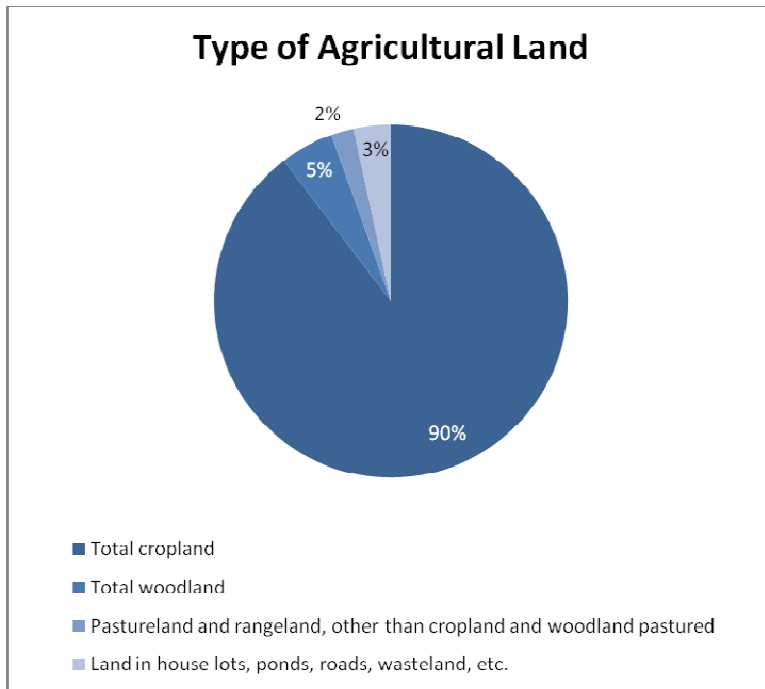
Federal government programs for conservation [wetland reserve] are available in agricultural communities. These programs provide incentives to protect conservation

Figure 2-23: Farms by Size 2002

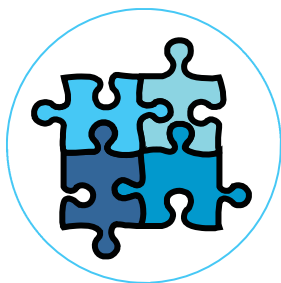


Source: Census of Agriculture

Figure 2-24: Type of Agricultural Land



Source: Census of Agriculture

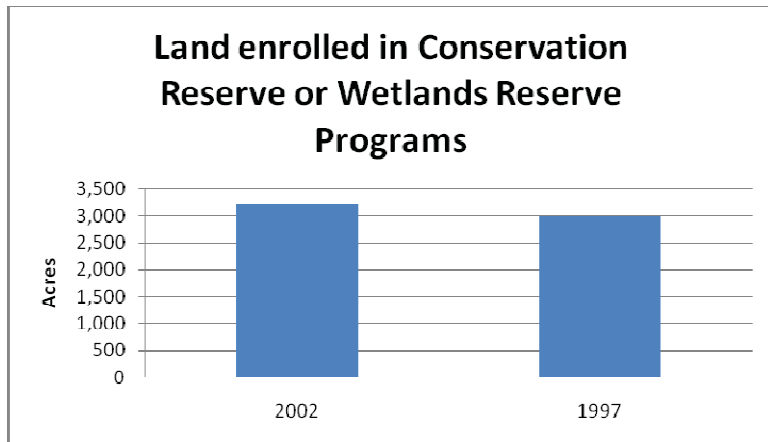


Cass County Indiana

lands and wetlands. In Cass County there was a seven percent increase in the land in the conservation and wetland reserve programs between 1997 and 2002.

Income data analysis

Figure 2-25: Conservation and Wetland Reserve Enrollment



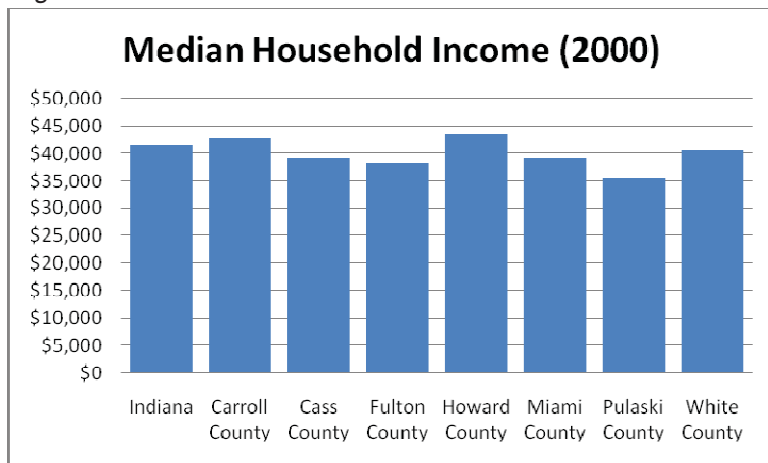
Source: Indiana Agricultural Statistics Service

for surrounding counties. In 2005, estimates were done for the community and determined that the median household income in the county was \$40,999 or \$44,812 if adjusted for inflation.

PCPI

Per capita personal income measures the total income in the community against the total population and is a number that reflects

Figure 2-26: Median Household Income 2000



Source: US Census Bureau

Income

Median household income is a measure of wealth in the community. It considers the income for the household, regardless of who is earning, and is a median to compensate for those with very large or very small incomes. The median household income in Cass County in 1999 (Census 2000) was \$39,193 which was slightly below the state median and in the middle of the median household incomes

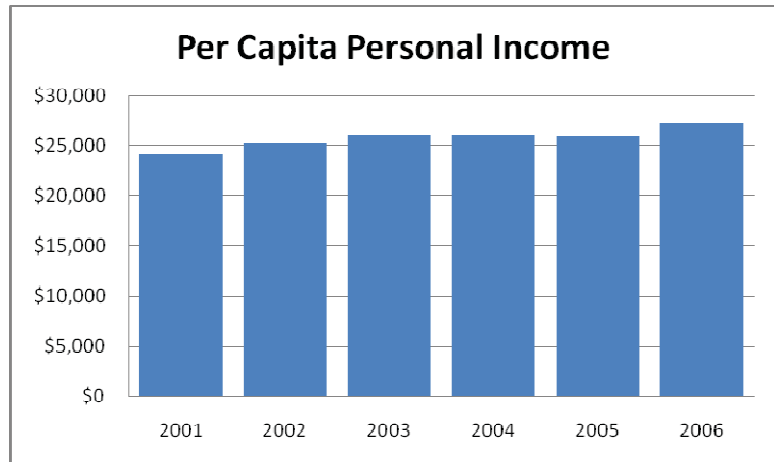
the income of the community if every man, woman, and child (regardless of age) had an income. In Cass County the per capita personal income has remained relatively unchanged between 2001 and 2006. The per capita personal income growth in the county has been less than three percent per year on average and has likely not been keeping pace with inflation. This means the purchasing power of the community for everything from

houses to cars to groceries and medical services has declined somewhat.

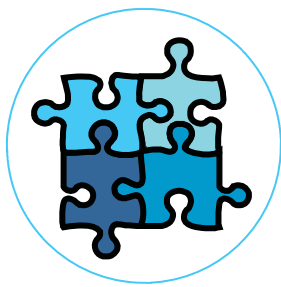
Poverty

Poverty measures provide us a picture of the number of people in the community that are living below a government defined income threshold and are generally not getting by on that income. In 2005 the number of people in Cass County in poverty was estimated to be 10.7 percent of the county population. Statewide approximately 12.2 percent of people were living in poverty. There were increases in poverty at both the state and county level between 2000 and 2005.

Figure 2-27: Per Capita Personal Income 2002-2006



Source: Bureau of Economic Analysis, Indiana Business Research



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Community setting

Community facilities include infrastructure (like roads, water treatment and distribution, and sewage treatment), buildings and places (like parks, fire stations, and town halls), and services (like police and fire protection) and have a significant impact on the quality of life in the community and the ability to retain existing residents and businesses while attracting new.

Roads

Cass County is served by several US highways and state roads. The Hoosier Heartland Corridor, is an east-west connection between Ft. Wayne and Lafayette following US 24 east of Logansport and SR 25 southwest of Logansport. The segment from Lafayette to Logansport is currently under construction and expected to be a major economic development driver in the years to come. US 35 runs northwest-southeast through Cass County, passing through Logansport and connecting Logansport to US 31 on the north side of Kokomo, providing access to jobs in Kokomo and to Indianapolis.



There are eight state routes in Cass County. SR 16 connects the communities of Twelve Mile, Metea, Leases Corner, Lucerne, and Royal Center in the northern part of the county. SR 17 begins in Logansport and heads north into Fulton County. SR 18 is an east-west connector in the southern portion of the county connecting Galveston and Young America to places like Marion. SR 25 runs through Clymers and Logansport before heading into Fulton County. It provides access for the Clymers industrial park. SR 29 connects Logansport to Indianapolis.

Most of the remaining roads in the county are considered local roads and streets (some county, some municipal). Major collectors in the county include: Old Kokomo Pike, CR 400N, CR 200N, CR 600E, CR 500S, and CR 700E.

Airport

The Logansport Cass County Airport is located near the intersection of SR 29 and CR 400S and is adjacent to the Logan-Cass Industrial Park. It has a 4,256' long east-west runway. The Logansport airport is owned and operated by the Logansport/Cass County Airport Authority.

Water

The city of Logansport has a municipal water treatment and distribution system, as do the towns of Galveston, Walton, and Royal Center.

The city of Logansport has a water plant and a well field to provide water service to the community. The water plant has a capacity of 9 million gallons per day (MGD) and a peak flow of 3.8 MGD. The well field has a capacity of 7 MGD and a peak flow of 3.7 MGD. The combined system average flow is just over 2 MGD. The water plant was built in 1954 and had additional treatment added in 1984 and 2005. The well field was built in 1968 and an additional well was added in 2008.



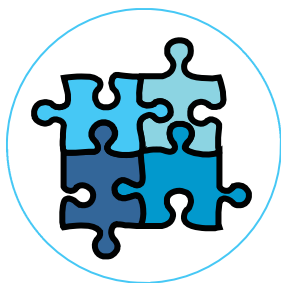
Sewer

The city of Logansport and the towns of Galveston, Royal Center, and Walton have sanitary sewer systems. All of these systems are combined sewage systems that treat both wastewater and storm runoff.

The Logansport wastewater treatment plant has a capacity of 9 million gallons per day (MGD) dry or 18 MGD wet, with a peak flow of 18 MGD and an average flow of 8.6 MGD. The treatment plant was built in 1958 and additional treatment capacity was added in 1973. The aeration basins and chemical feed were improved in 2003. The service area for the Logansport treatment plant is the city limits. The Logansport system experiences 54 combined sewer overflow (CSO) events per year.

Galveston has experienced problems with its sewer system over the past twenty years, but improvements made in 2007 have resulted in a previous sewer ban being lifted. New connections to the Galveston sewer system are now possible.

Royal Center has a capacity of 200,000 gallons per day (GPD) and a peak flow of 500,000 gpd. The treatment plant was built in 1995 and they experience approximately one CSO event per year.



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Walton has a capacity of 150,000 gpd with a peak flow of 300,000 gpd and an average flow of 136,000 gpd. The treatment plant was built in 1968 and was improved in 1979 and 1995. They experience approximately four CSO events per year.

Police, Fire, EMS



Cass County residents receive their police protection from the county sheriff's department, unless they live in an incorporated community with a police department.

County residents receive their fire protection from the Logansport Fire Department or one of the township fire departments. The Logansport Fire Department serves the city of Logansport as well as the unincorporated areas of Eel, Washington, Noble, and Clay townships through contractual agreements.



Government Buildings

There are a number of government-owned buildings in the county. These buildings include the Cass County Courthouse and Justice Center in Logansport, the Logansport City Hall, and the Galveston Town Hall.

Libraries

The county is served by the Logansport-Cass County Public Library. The library has facilities

located in Logansport and Galveston.

Parks

France Park is the signature park of the Cass County Parks Department. The park is located along the Wabash River south of US 24 between Logansport and Georgetown. It has a number of interesting features including a waterfall, a 10 acre prairie located in a plateau overlooking the old Kenith Stone Quarry, an 1800s Italian oven that once served as a community resource for the immigrants working on the canal and quarry operations, and fragments of the Wabash and Erie Canal and towpath. There are five trail heads in

France Park, totaling five to seven miles of biking and walking trails for a variety of users. The park has 80,000 visitors annually and generates \$210,000 to \$403,000 in revenues.

Schools

Schools serve as a source of pride in the community and gathering places for social and cultural events. There are four public school districts that serve the county: Caston School Corporation, Pioneer Regional School Corporation, Southeastern School Corporation, and Logansport Community School Corporation. The school districts are part of a multi-county cooperative with other districts to provide services for special education students.

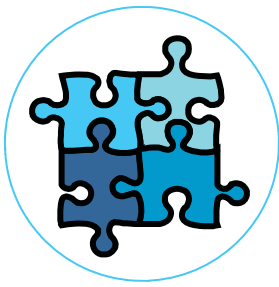
Historic Structures

Historic districts and structures can be a source of community pride and a reminder of the community's past heritage. The communities in Cass County are primarily older communities and have some historic buildings and places worth preserving as part of the community's cultural heritage.

There are four structures in Cass County on the National Register of Historic Places, all of them are in Logansport. They include the Ferguson House on Broadway, the Kendrick-Baldwin House and the Pollard-Nelson House on Market Street, and the Washington School on Ciott.

There are several historic districts in Logansport. The Courthouse Historic District includes such structures as the Masonic Hall, Elks Lodge, McCaffet Building, Public Library, State Library, Post Office, and Railroad Depot. The Riverside Historic District is along the Eel River and includes the Longfellow School, Redmond-Healy House, Grace Evangelical Church, Faith United Methodist Church, Trinity Episcopal Church, Daniel Webster





Cass County Indiana

School, Calvary Presbyterian Church, War Veterans Memorial Home, and Ninth Street Christian Church. The Point Historic District includes St. Joseph's Church and St. Luke's Evangelical Church. The Banker's Row Historic District includes a number of impressive homes.

The Galveston Historic District includes a number of homes and the Galveston United Methodist Church.

Environmental Features

Floodplain

Floodplains are an important consideration in the development of the community to protect the natural systems and prevent excessive damages to structures. The floodplains in Cass County lie along:

- Eel River and tributaries including Twelve Mile Creek
- Wabash River and tributaries including Eel River and Crooked Creek
- Rock Creek and tributaries
- Deer Creek and tributaries
- Pipe Creek and tributaries



Many sentiments were expressed in the process of developing the vision statement for the county. The following preliminary vision was based, in part, on that input and attempts to capture the spirit of public sentiment toward the county.

The Citizens of Cass County welcome visitors to our dynamic communities and scenic countryside. We are extremely proud of our quality of life, infrastructure, and the ongoing commitment of protecting environmental and historical assets.

Cass County offers access to excellent local and regional educational facilities with varied curricula that provide individual opportunities for continued growth and development.

Cass County has medical facilities that are second-to-none, staffed and supported by highly qualified individuals with general practice and specialty backgrounds.

Cass County supports a variety of social clubs and activities that provide an ongoing opportunity for personal growth, as well as exposure to happenings throughout the world.

Cass County provides recreational facilities throughout the County that offer a variety of family and individual settings for year-round use.

Cass County government officials at all levels, take a progressive approach to their duties, providing the foundation for sustained stability, incremental growth when required, while at the same time maintaining an overall profile that protects the interests and well-being of the citizenry of Cass County.

WE ARE CASS COUNTY! *A crossroad county located in north-central Indiana, that provides all who visit and those who stay, excellent opportunities to live, work, learn, and play.*



Chapter 3: Vision



Cass County Indiana

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The vision is the statement of what the county hopes to be, what it hopes to accomplish, within the next two decades. The goals and objectives of the plan flow from the vision statement as a means of achieving the vision.

Developing the vision statement

The vision statement was developed by the steering committee through an interactive process.

Early in the process the steering committee brainstormed key concepts for the vision statement. The results of this session were developed into a draft vision statement. Steering committee members also drafted their own vision statements for consideration. After revision and refinement, the draft vision statement was shared with the public at each of two public workshops (see Appendix A). The final vision statement was refined from the input received from these meetings and the steering committee.

Vision Statement

The people of Cass County are constantly achieving a higher level of excellence in development of their state of the art facilities, economic vitality, quality infrastructure, efficient and well-coordinated government, progressive schools, and scenic rural countryside that contribute to an enviable quality of life. The local economic vitality is advanced by developing the county's assets that include a strong commitment to medical services and being the regional center for value-added agriculture. Cass County residents continue to create a community of choice by protecting and enhancing local assets with a cooperative spirit, while managing growth in a way that allows future generations to benefit from the land, economy, and quality of life.

We are Cass County – committed to the preservation of all things that are good, for generations to come!



Cass County Indiana

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Two of the three elements that a comprehensive plan must address under Indiana law are related to land use and development. They are:

A comprehensive plan must contain the following elements:

- 1) A statement of objectives for the future development of the jurisdiction*
- 2) A statement of policy for the land use development of the jurisdiction.*

This chapter addresses both and provides a future land use map to be used by the plan commission and county commissioners in making decisions.



Chapter 4: Land Use



Cass County Indiana

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Land is an important resource. Understanding how the land has developed, what the opportunities and limitations on development are, community priorities and values for land use, and the tools available to manage land use in the county are critical to achieving the community vision.

Inventory and existing land use map

The county's existing land uses are described in terms of broad classifications of agriculture, residential, commercial, industrial, and public/semi-public uses. The Cass County Plan Commission has jurisdiction over the land that is outside of the Logansport extra-territorial jurisdiction, and the incorporated towns in the county. Unincorporated towns do not have a separate governmental structure and are under the jurisdiction of the county for planning and government in general.

Agriculture

Agriculture accounts for the largest land use in the county, comprising 96 percent of the land area outside of the Logansport planning jurisdiction. This includes crops, grazing lands, woodlands, farmsteads, and other agriculture-related uses.

Residential

Residential uses are concentrated in the incorporated and unincorporated towns, however there is some scattered residential development in the rural parts of the county such as in the Lake Cicott area.

Most of the residential development is concentrated in the central third of the county, and along US 35.

Residential development in most of the incorporated communities is served by public water and sewer. Development outside of these utility service areas is served by individual on-site wells and septic systems. Many of the septic systems were installed more than twenty years ago, some on small lots, and are beginning to fail due to age and lack of regular maintenance.





Cass County Indiana

Commercial

Most of the commercial development in the county is in Logansport, Galveston, Walton, and the downtown areas of a few other unincorporated towns. There is a commercial node and scattered commercial development along US 24 west of Logansport, near Lake Cicott.

Industrial

Industrial development is most concentrated west of Logansport in an area along the future Hoosier Heartland Corridor (SR 25). This area is served by rail and will have excellent surface transportation by way of the Hoosier Heartland Corridor. The Clymers area has been designated as an economic development area by the Cass County Redevelopment Commission and currently is home to The Andersons, ADM, and Essroc.

Other industrial pockets exist in and near Royal Center and along the US 35 corridor south of Logansport near Walton and Galveston.

Much of the county's industry is value-added agricultural operations such as grain processing, ethanol, dairy operations, and meat processing.



Public and Semi-Public

Public and semi-public uses include parks, government owned land, utility land, churches, cemeteries, schools, and similar uses. The largest public use in the county is France Park.

Land use analysis

Two of the most significant limiting factors to development in the county are protection of prime farmland and floodplains.

Prime Farmland

According to the Natural Resource Conservation Service Soil Survey from 1981, most of the soils in Cass County are well suited/suited for crop agriculture, though some areas may require drainage in order to support crops. Prime farmland is defined by the U.S. Department of Agriculture and is land that is best suited to producing food, feed, forage, fiber, and oilseed crops.

Floodplains

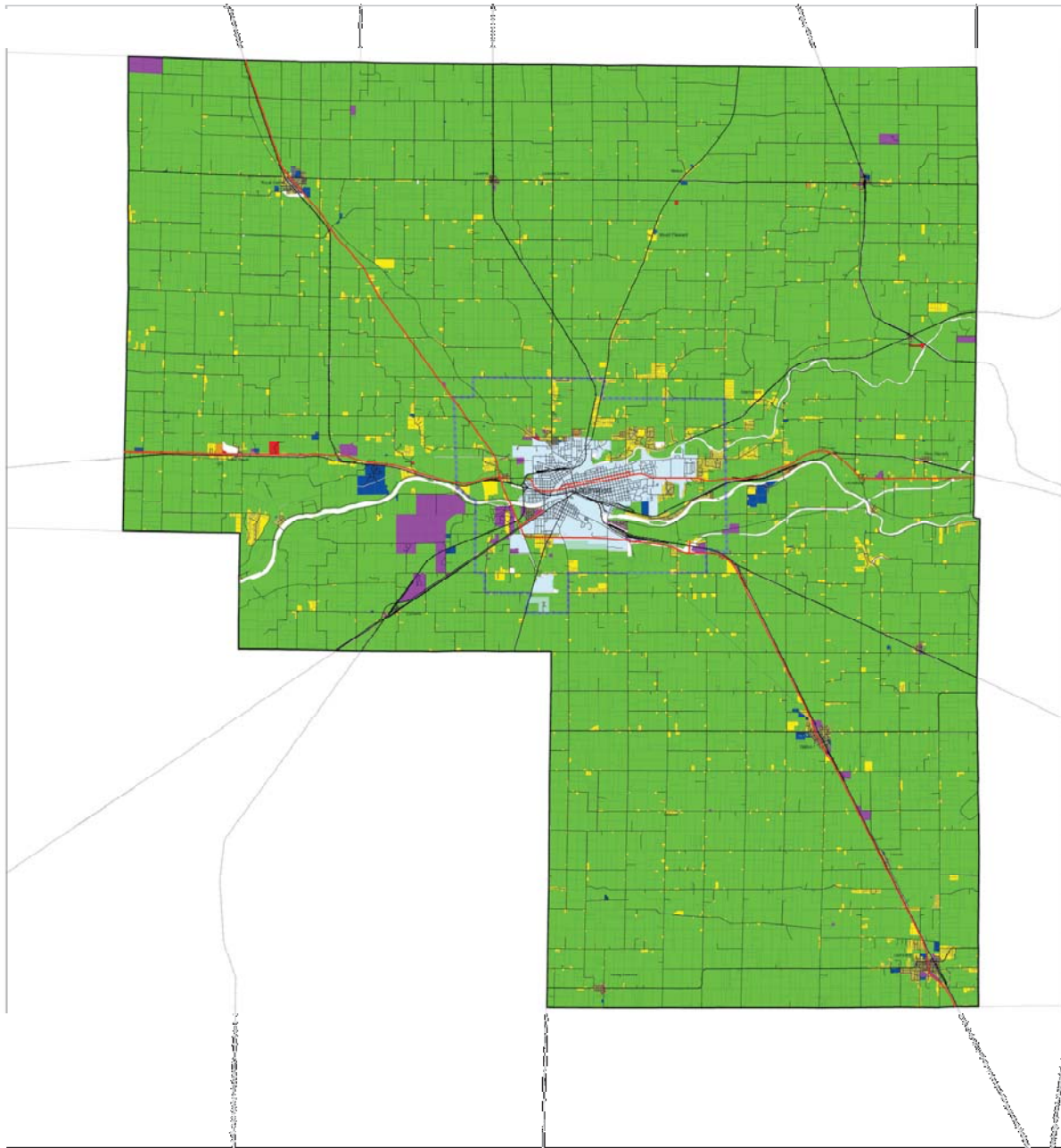
Located at the confluence of the Eel and Wabash Rivers, Logansport is periodically subject to flooding, as are areas of Cass County along these rivers and their tributaries.

New flood insurance maps were developed for Cass County in 2007. These maps are used to determine the flood risk for particular areas of the county and identify locations that are typically not suitable for structures, and areas where structures will need to carry flood insurance.



Cass County Indiana

Figure 4-1: Existing Land Use



Existing Land Use

DRAFT: January 2009



LSI Planning, Inc.

0 1.25 2.5 5
Miles



Source: Indiana Spatial Data Portal, Center for Advanced Application in Geographic Information Systems

Cass County, Indiana

Future land use and map

The future land use map is a graphic representation of the desired land use pattern in the county, reflecting the vision and goals adopted in the plan. It was developed through a review of two alternative development scenarios and consideration of the land use plans for the City of Logansport.

Alternative Scenarios

Two scenarios were presented at the public open houses (see Appendix B) for consideration and then discussed and refined by the steering committee. One scenario provided for urban/suburban growth areas, rural growth areas, and residential, commercial, and industrial growth near most of the existing towns. The scenario separated agricultural industrial uses from conventional agriculture and conventional industrial uses. The other scenario provided a more limited amount of growth, focused on communities with sanitary sewer facilities, rural preservation areas, and also separated agricultural industrial uses as a separate land use.

Preferred Scenario

Cass County is not projected to experience substantial growth during the twenty year planning period, so the preferred scenario accommodates only a limited amount of new development, particularly new residential development. Rural preservation areas surround the communities that are planned for growth, but are smaller in scale than those originally proposed in the scenarios, except where needed to bring in existing settlements. Agricultural industry has been consolidated with conventional industrial uses.

The preferred scenario is shown on the future land use map. The map is intended to be used by the plan commission and the county commissioners in making land use decisions, particularly related to subdivisions and rezonings.

Agricultural

The agricultural designation promotes continued use of these lands in active agriculture. The intent is to protect large tracts of land for modern farming operations. To that end, subdivision of land should be limited to one split per 20 acres of the parent tract. Residential



Cass County Indiana

uses in this area should be farm-related to the extent possible and not conflict with the practice of agriculture. Accessory buildings would typically be larger than main buildings and may be numerous and include barns, silos, garages, and similar facilities.

For new residential development, property owners should be required to sign a “Right to Farm” declaration stating that they understand they will be in an agricultural area and may be impacted by the effects of normal agricultural operations — noise, odor, dust, late hours, etc.. Residential subdivisions are strongly discouraged in these areas.

Rural Preservation

Rural preservation areas are those areas that may accommodate persons seeking a “rural” lifestyle, but not within the county’s prime farming locations. The uses in these areas would include large lot residential uses, hobby farms, stables, and cottage industries. Accessory buildings may be of a different scale and number than allowed in a conventional residential district. Setbacks are large to protect the rural character. The maximum gross density for the area is one unit per five acres. Development in these areas is typically served by individual on-site septic systems or small cluster or alternative systems.

Residential

The residential land uses are primarily intended to be extensions of existing residential growth patterns in the towns with sanitary sewer facilities. Some new residential development is also planned for the area surrounding France Park. To the extent possible new residential development should be served by public sewer systems or cluster/ alternative systems that could be converted to public sanitary sewer systems as service becomes available.

Commercial

A limited amount of new commercial area is planned outside the Logansport extra-territorial jurisdiction. Planned commercial development is located adjacent to existing towns and would be expected to be served by public sewer systems to the extent possible.

Industrial

Perhaps the most extensive proposed land use is new industrial development. The plan concentrates industrial development (both agricultural industry and conventional industry) in the Clymers Industrial Park area to take advantage of the logistical opportunities that currently exist and will be enhanced by the upgraded roadway. The industrial area is not currently served by public utilities (water and sewer) and lacks telecommunications infrastructure. Providing infrastructure to this area will be critical for attracting the development desired for the area.

Public/Quasi-Public

New public lands are not shown on the future land use map. The unincorporated towns have expressed desire for new community or neighborhood scale park facilities. No other public facilities have been discussed or considered.

Land use development policies

The following policies provide direction on the intent of the county for future land use.

Support agricultural uses and agri-business. Cass County has a long history as an agricultural community and the future economy of the county will depend on agriculture and value-added agricultural products.

Protect surface and ground water resources. Failing septic systems on small lots and in areas not suitable for septic systems have contributed to impairment of local water bodies. To ensure safe drinking water and provide for water-based recreation, the community will limit proliferation of on-site septic systems and encourage alternatives.

Connect transportation systems and land use.

Transportation systems and land use interrelate to one another. The transportation network cannot function efficiently if adjacent land uses generate excessive traffic. Land cannot be developed for economic purposes without transportation access. The two need to be considered together when evaluating development proposals.



Guide growth toward existing communities. Urban and suburban scale development should be accommodated in areas that can provide public utilities (including water and sewer), be walkable communities, and be served by the commercial uses needed on a daily basis. Doing so supports the viability of existing communities, protects the viability of agricultural land, and lowers the overall cost of development.

Goals and objectives

The goals and objectives related to land use include planning principles of agricultural preservation and directing growth to existing communities.

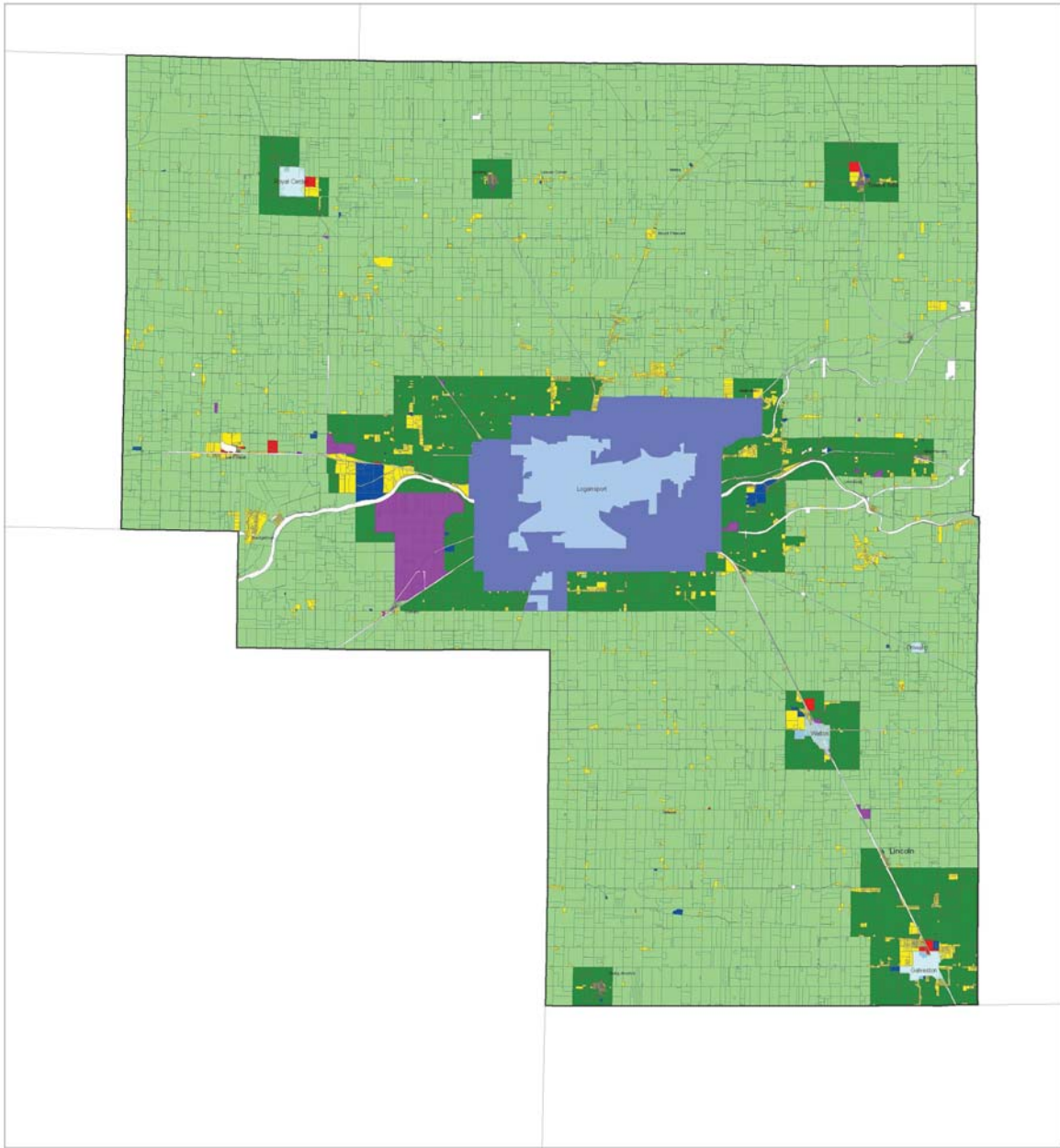
Goal 1: Recognize and strengthen existing communities

- Objective 1A: Direct growth to existing incorporated communities where it can be supported by adequate public utilities
- Objective 1B: Require urban/suburban density residential development, commercial development, and industrial development to be served by water and sewer where available
- Objective 1C: Encourage urban/suburban density residential development, commercial development, and industrial development to use alternative or cluster wastewater treatment systems where public sewers are not available
- Objective 1D: Require a traffic impact analysis for commercial and industrial uses, and residential subdivisions anticipated to generate more than 150 vehicle trips per day
- Objective 1E: Ensure new development doesn't detract from existing development
- Objective 1F: Develop and adopt an administrative subdivision review process for lot line corrections, plat corrections, and single splits that do not create buildable lots

Goal 2 Protect the viability of agricultural operations

- Objective 2A: Support agricultural industries
- Objective 2B: Minimize agricultural/non-agricultural use conflicts

Figure 4-2: Future Land Use



Future Land Use

Cass County, Indiana

DRAFT: July 2009

- Logansport Fringe
- Agriculture
- Rural Preservation
- Ag Industry
- Residential
- Public/Quasi-Public
- Commercial
- Industrial



Source: Indiana Spatial Data Portal, Center for Advanced Application in Geographic Information Systems



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- Objective 2C: Limit subdivision of agricultural parcels to 1 split per 20 acres

Goal 3: Manage development along the Hoosier Heartland Corridor west of SR 29

- Objective 3A: Develop and adopt access management standards for the corridor in an overlay district
- Objective 3B: Adopt sign regulations for the corridor in an overlay district

Natural systems are critical to the water quality, rural character, quality of life, and economy of Cass County. This chapter focuses on protecting natural systems through use of Best Management Practices (BMPs).



Chapter 5: Environment



Cass County Indiana

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The quality of the environment and the recreation opportunities available in a community are significant indicators of the local quality of life. With the confluence of the Eel and Wabash Rivers, the county has significant water assets to manage and protect. The county's rich agricultural heritage is another part of the county quality of life.

Environmental policies

The environmental policies are those related primarily to protecting the county's surface and groundwater resources. Policies in support of the plan are:

- Protect groundwater resources as sources of drinking water in the county.
- Protect surface water resources for drinking water, fishing, and recreation.
- Support use of alternative wastewater treatment strategies where appropriate.
- Encourage agricultural practices that sustain the viability of the land for continued farming.

Parks and recreation policies

Parks and recreation policies are intended to support the goals and objectives for parks and recreation. These policies are:

- Focus county recreation resources where they can serve as a regional attraction.
- Use recreation opportunities as a part of the economic development strategy.



Goals and objectives

Environmental goals are found in Chapter 7: Public Facilities. The following goals were developed for parks and recreation.

Goal 1: Continue to invest in and improve existing county parks.

- Objective 1A: Implement the recommendations of the parks and recreation plan
- Objective 1B: Implement the recommendations of the France Park subarea plan
- Objective 1C: Improve park site entrances with new signage and landscaping
- Objective 1D: Make improvements to park site facilities
- Objective 1E: Identify the theme/vision for select parks
- Objective 1F: Prepare site development plans with implementation strategies for select parks

Goal 2: Support the development of neighborhood or community scale parks to serve the unincorporated towns

- Objective 2A: Identify recreation needs in the unincorporated towns
- Objective 2B: Develop a plan for land acquisition and park development consistent with identified needs

Goal 3: Develop a recreational trail system that connects key destinations in the county while contributing to the regional trail network

- Objective 3A: Establish or identify an organizational structure for the planning, funding, and development of trails in Cass County
- Objective 3B: Identify the land, right-of-way, or easement acquisitions needed for proposed trails as part of an engineering design phase
- Objective 3C: Build and maintain the Cass County trail system
- Objective 3D: Develop a blueways system for Cass County

Transportation systems are important for moving people and goods from place to place. The transportation system includes airports, railroads, public transportation systems, roads, and the pedestrian circulation system.



Chapter 6: Transportation



Cass County Indiana

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Transportation involves a variety of modes and is larger than the road network. The transportation plan needs to consider rail, air, and non-motorized transportation options in addition to roads.

Inventory and existing thoroughfare map

Roads

Cass County is served by several US highways and state roads. The Hoosier Heartland Corridor is an east-west connection between Ft. Wayne and Lafayette following US 24 east of Logansport and SR 25 southwest of Logansport. The segment from Lafayette to Logansport is currently under construction and expected to be a major economic development driver in the years to come. US 35 runs northwest-southeast through Cass County, passing through Logansport and connecting Logansport to US 31 on the north side of Kokomo, providing access to jobs in Kokomo and to Indianapolis. US 35 is classified as a minor arterial outside of the Logansport urban area. US 24 is classified as a principal arterial.

There are six state routes in Cass County. SR 16 connects the communities of Twelve Mile, Metea, Leases Corner, Lucerne, and Royal Center in the northern part of the county, and is a rural major collector. SR 17 begins in Logansport and heads north into Fulton County as a rural major collector. SR 18 is an east-west rural major collector in the southern portion of the county, connecting Galveston and Young America to places like Marion. SR 218 runs east-west passing through Walton and is a major collector. SR 25 runs through Clymers and Logansport before heading into Fulton County, ultimately to Lafayette, and is an urban principal arterial from Logansport south to the county line and a minor arterial north of Logansport. It provides access for the Clymers industrial park. SR 29 connects Logansport to Indianapolis and is a minor arterial.

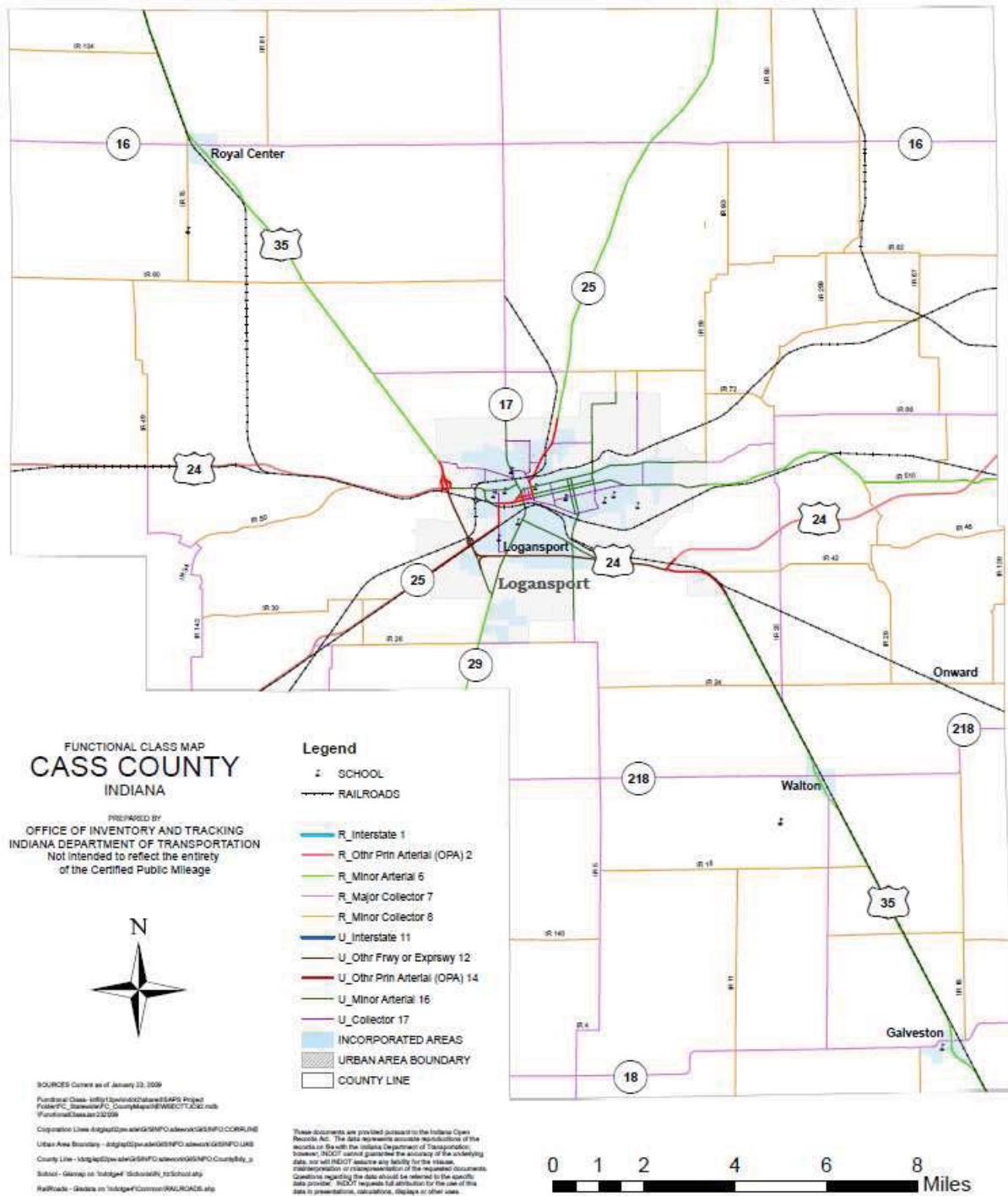
Most of the remaining roads in the county are considered local roads and streets (some county, some municipal). Major collectors in the county include: CR 200N, CR 200 E, CR 600E, CR 700E, CR 400W, and CR 700/675/800W.

The county does not have a local functional classification map at this time. The Indiana Department of Transportation (INDOT) Functional Classification map currently serves as the county's map.



Cass County Indiana

Figure 6-1: INDOT Functional Classification Map



Source: Indiana Department of Transportation

Airport

The Logansport/Cass County Airport is located near the intersection of SR 29 and CR 400S, adjacent to the Logan-Cass Industrial Park. The airport is owned and operated by the Logansport/Cass County Airport Authority. It has a 4,256' long east-west runway.

Rail

A Norfolk-Southern line traverses Cass County coming northeast from Delphi, Indiana into Logansport, then heading east to Peru, Indiana. The Winemac Southern Railroad has a line that runs from Kokomo to Logansport and south into Carroll County. The Logansport and Eel River Shortline also operates in the county. The Toledo, Peoria, and Western Railway Corporation has tracks coming into the Lake Cicott area from Monticello in White County to the west of Cass County. This line does not extend to Logansport. The northern half of Cass County does not have rail service.

Existing Alternative Transportation

Alternative transportation can be defined as non-motorized transportation modes within the larger transportation network. The traditional transportation network generally consists of highways and streets, aviation facilities and railroads. Alternative transportation modes focus on pedestrian walks or trails and bicycle paths.

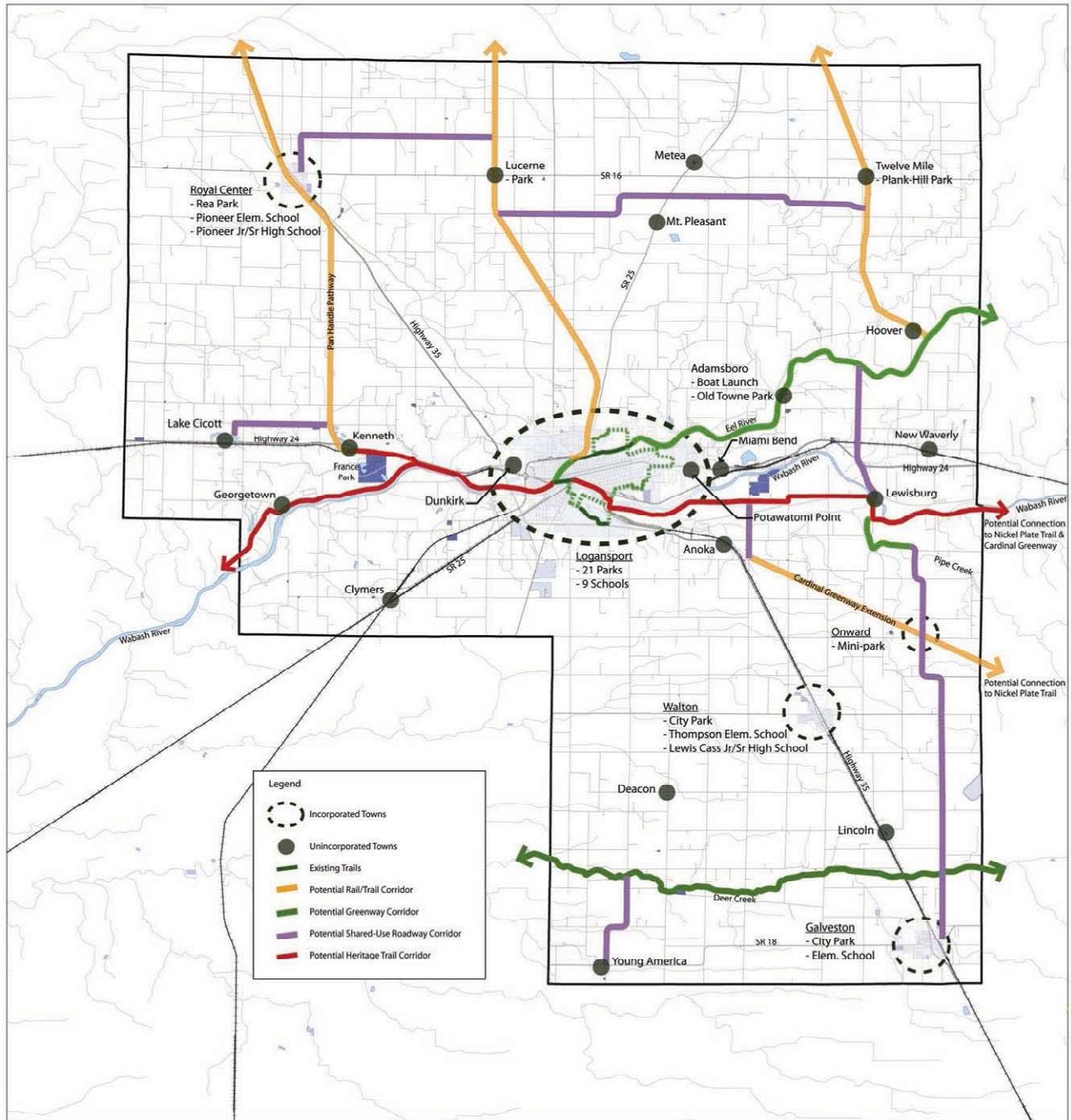
The primary goal in development of the alternative transportation system is to provide recreational trail connections to various destinations and facilities in the county. The planning process included information review, review of goals and objectives and identification of potential alternative transportation corridors in Cass County.

Alternative transportation observations and an assessment of potential alternative transportation corridors were mapped with preliminary parks and recreation goals (Figure 6-2), Park and Recreation / Connectivity Opportunities map.



Cass County Indiana

Figure 6-2: Park and Recreation/Connectivity Opportunities map.



The existing trail system in Logansport sets the standard for development of similar alternative transportation elements in the county. Completed trails include the Little Turtle Waterway Trail along the north shore of the Wabash River downtown, the River Bluff Trail along the Eel River and the recently completed trail along Heckman Boulevard connecting to the new Ivy Tech campus.

Two separate regional trail initiatives are in the planning and design stages in Cass County. The Panhandle Pathway is a regional gravel pathway following the old Panhandle Railroad planned for construction in 2010. The other major regional trail planned for Cass County is development of the Wabash River Heritage Trail along the Wabash River. In proximity of Cass County, this trail is planned to connect Delphi in Carroll County and Peru in Miami County.

Additionally, opportunities to develop other potential alternative transportation corridors are described in the Alternative Transportation Plan section below.

Future thoroughfare development and map

The most significant changes to the thoroughfare map are those related to the development of the Hoosier Heartland Corridor through the county during the planning period.

Hoosier Heartland Corridor—SR 25 and US 24

The Lafayette-to-Logansport section of the Hoosier Heartland Highway was the final link in the state's plan for a transportation corridor that will stretch nearly 100 miles from Lafayette to Fort Wayne. In September 1999, Governor Frank O'Bannon opened the 8-mile section of the Hoosier Heartland Highway from Logansport north. The Groundbreaking Ceremony for the project from Lafayette to Logansport took place on October 22, 2008 in Lafayette. One interchange will serve as a community gateway to Logansport via Burlington Avenue.

Functional Class

The primary functional classification changes reflect the changes in the Hoosier Heartland Corridor. Other changes include the addition of locally designated collectors.



Cass County Indiana

Alternative transportation plan and map

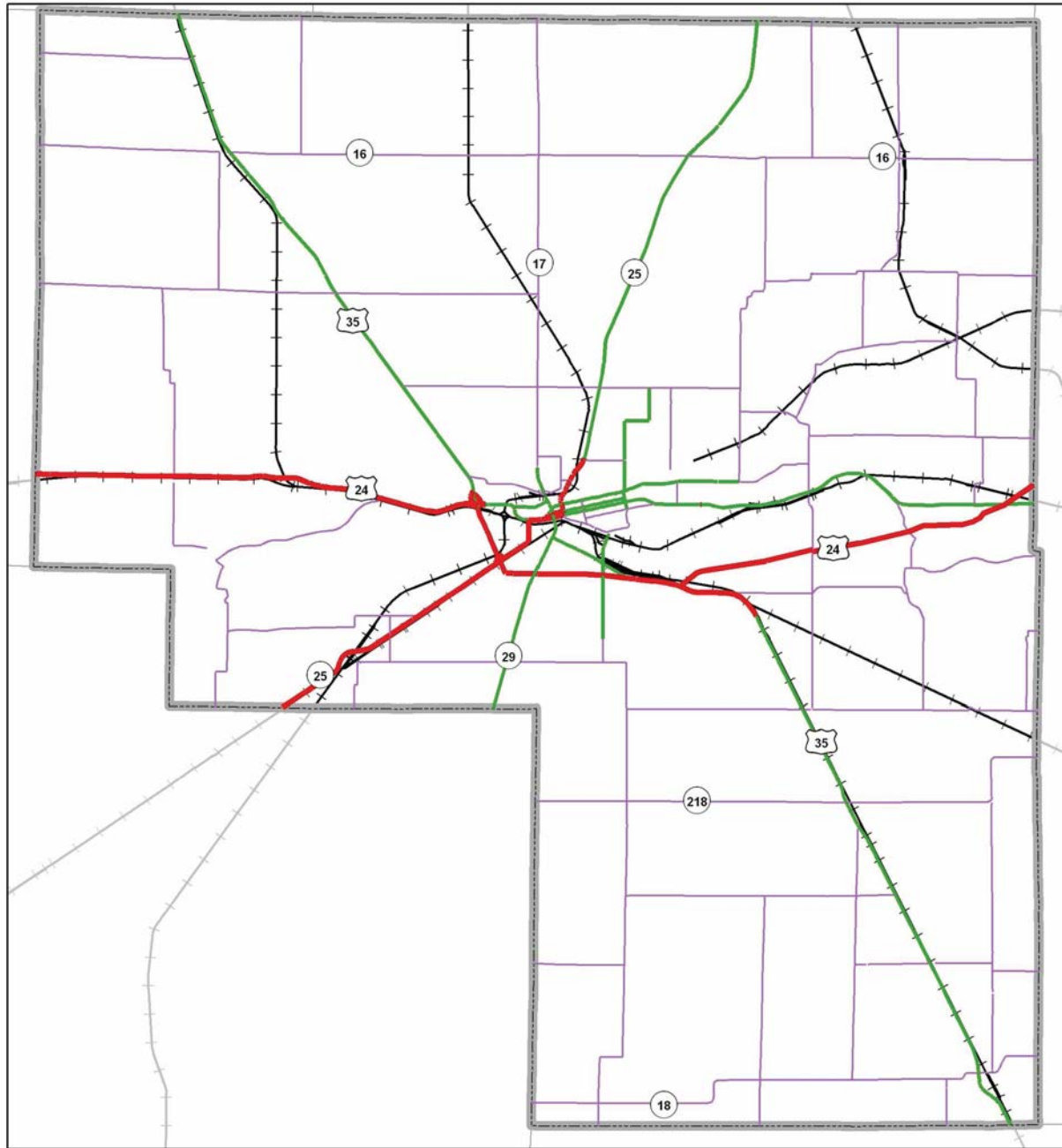
The final alternative transportation system plan for Cass County responds to public input and the final goals and objectives identified in the Action Plan. The plan reflects priority projects identified in the Alternative Transportation Priorities section and utilizes a variety of alternative transportation corridors in response to goals and objectives.

Alternative transportation system types include:

- Rail-Trail corridors
- Greenway corridors
- 'Blueway' corridors
- Shared use right-of-way corridors

Typical trail sections describing each of the connectivity types are included in Figure 6-5 to 6-7.

Figure 6-3: Functional Classification Map for Cass County



Transportation:
Functional Classification

Cass County, Indiana

- Principal Arterial
- Minor Arterial
- Collector
- Railroad



0 1.25 2.5 5 Miles

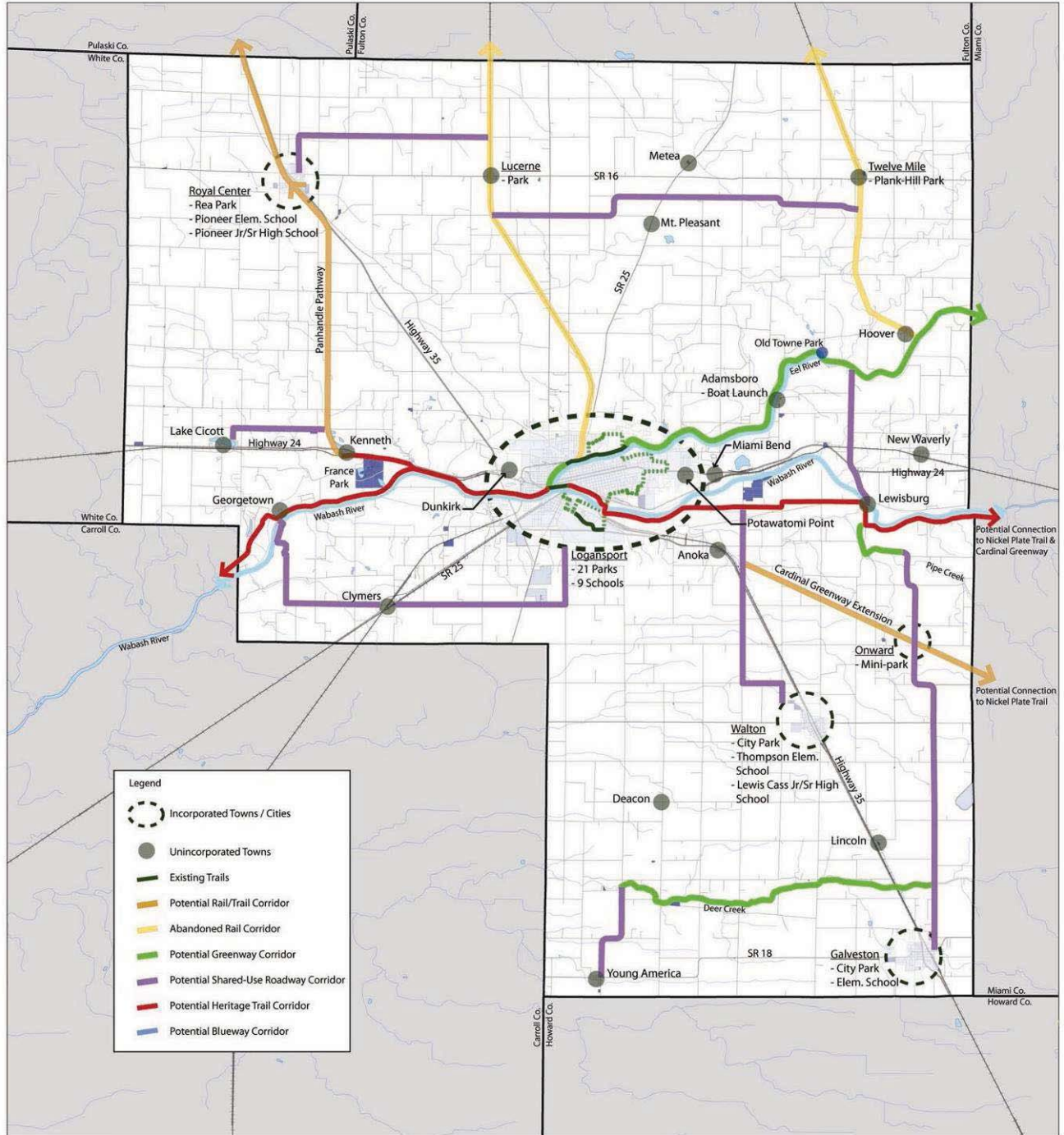


Source: Indiana Spatial Data Portal, Center for Advanced Application in Geographic Information Systems, INDOT



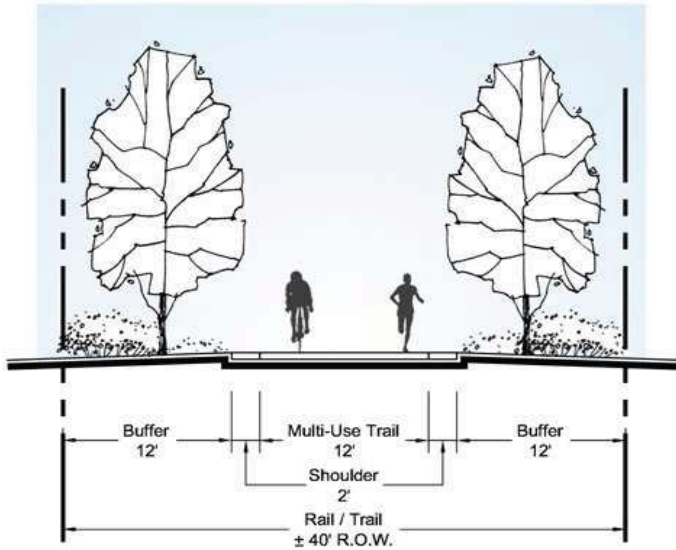
Cass County Indiana

Figure 6-4: Cass County Connectivity Plan



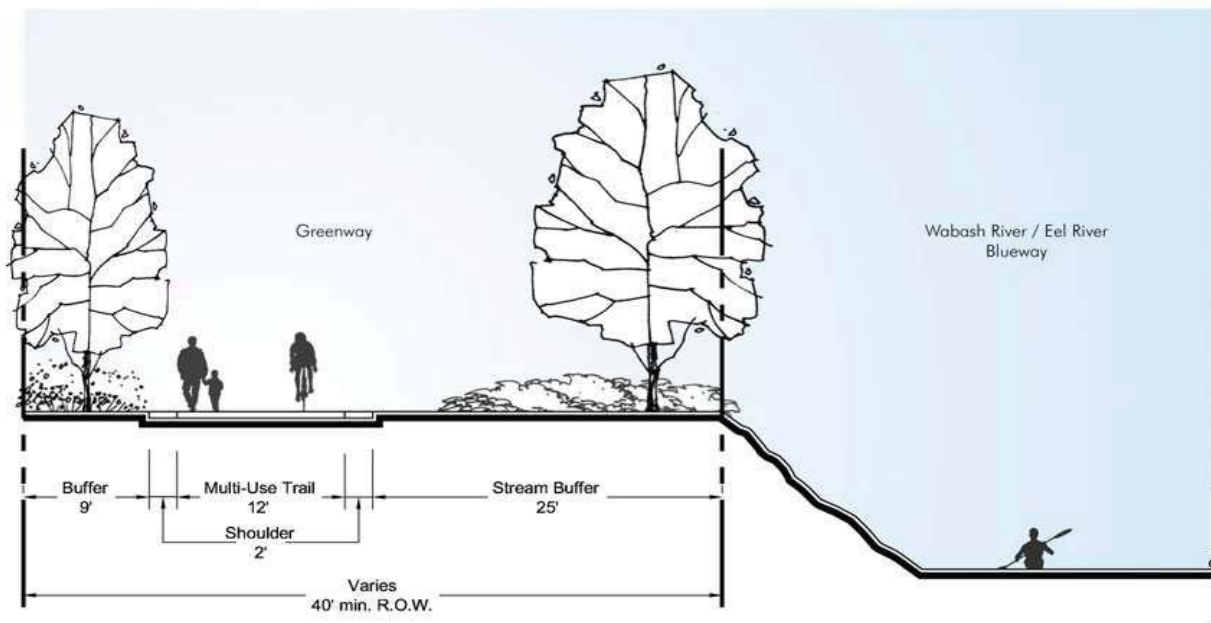
Source: CBA

Figure 6-5: Proposed typical rail-trail section



Source: CBA

Figure 6-6: Typical combined 'blueway' and greenway corridor section

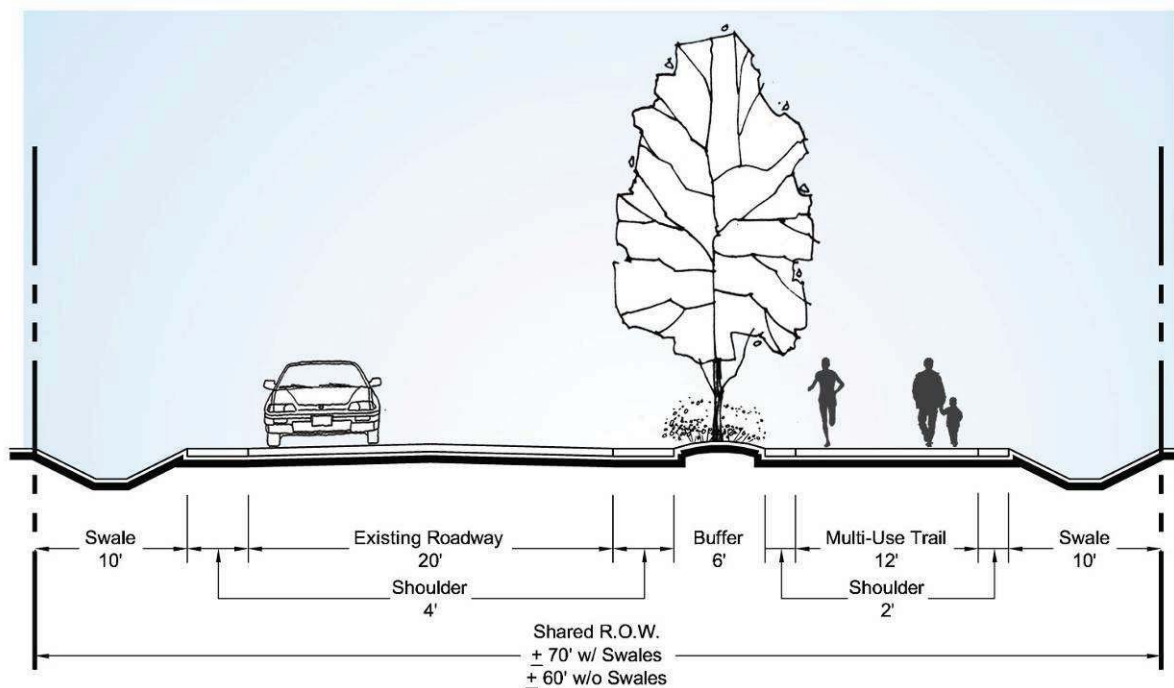


Source: CBA



Cass County Indiana

Figure 6-7: Shared-use right of way section



Source: CBA

Greenway Corridors:

The width of greenway corridors can vary greatly. Forty feet is considered a minimum width. Trail placement should emphasize views, accessibility and the surrounding landscape character. As with rail-trails, greenway corridors can often be implemented with minimal vehicular conflicts. At locations where roadway crossings are required, grade separation should be considered. This could include the use of oversize culverts or crossing below existing bridges.

Blueway Corridors:

Blueway corridors consist of rivers and streams with designated canoe and kayak trails. These trails should be mapped with other trails in the system. Trail components will include signs placed along the stream and water access points. In Cass County existing water access is provided at several locations along the Wabash River and at the

Adamsboro Canoe Launch on the Eel River. Water access facilities should include boat ramps, parking, restrooms, picnic tables and benches. For-profit facilities such as canoe liveries can be located near the water access points.

Shared-Use Corridors:

At locations where greenway corridors are not conveniently located to facilitate alternative transportation connections, shared use roadway rights-of-way are utilized. These can be placed on rural county roadway sections. The standard existing roadway right-of-way is approximately 50 feet wide, consisting of a 20 to 22 foot wide roadway with swales on each side. In most cases additional right-of-way will be required for construction of shared use corridors. To maximize the safety of pedestrians and bicyclists, the trail should be physically separated from the roadway with a parkway or landscape buffer. Where right-of-way constraints limit the amount of property that can be acquired, bicycle lanes incorporated into a widened roadway are recommended. When bicycle lanes are provided, reduced speed limits should be considered to improve bicyclist safety.

Utility Corridors:

The alternative transportation inventory effort included potential utility corridors. The only major overhead electric transmission line extends between Lewis Cass High School in Walton and the Pipe Creek corridor near Onward. The nature of this utility corridor appeared to be too narrow to accommodate a trail corridor.



Combined 'blueway' and greenway



Similar 'blueway' character photograph



Shared-use corridor with wide right-of-way



Cass County Indiana

Plan

The Wabash River Heritage Corridor is a regional trail network consisting of greenway and shared use roadway segments. The Wabash River Heritage Commission has identified the preliminary alignment in Cass County. Because of the historic role water transportation played along the Wabash River and the nearby Wabash and Erie Canal, extensive historic and interpretive opportunities exist. This corridor generally parallels the Wabash River and extends across the county. Connections are provided to Georgetown, France Park and the Logansport Trail System.

In addition to connecting major destinations, population centers and park and recreation facilities in Cass County, the Connectivity Plan recommends connections to incorporated and unincorporated towns surrounding Logansport. The use of shared use right-of-way corridors is suggested where connections are not feasible with rail-trail or greenway corridors. A list of recommended shared use roadway corridors and destinations is provided below:

- Georgetown – Clymers: Wabash River bridge, CR 675W, and CR 400S.
- Clymers – Logansport: CR 400S and CR 50E
- Lake Cicott – Kenneth: CR 50N to Panhandle Pathway
- Royal Center – Lucerne: CR 650W and CR 800N to Panhandle Pathway
- Lucerne – Twelve Mile: CR 600N, CR 175E and CR 650N and using existing abandoned rail corridors
- Eel River Greenway – Lewisburg: CR 800E and Old U.S. 24
- Wabash River Heritage Trail – Walton: CR 500E, CR 600S and CR 600E
- Pipe Creek Greenway – Onward – Galveston: CR 950E, CR 600S and CR 1000E
- Deer Creek Greenway – Young America: CR 200W, CR 1250S and CR 150W

In addition to the shared use right-of-way corridors identified above,

use of bicycle lanes is encouraged to provide additional optional connectivity to smaller unincorporated towns. The connecting corridor from Deer Creek Greenway north of Young America to the shared use connector between Clymers and Logansport would be an ideal candidate for integral bicycle lanes.

For each of type of corridor identified above, more detailed analysis and investigation is suggested to determine the overall feasibility of these alternative transportation corridors. This investigation should research available right-of-way, utilities and other requirements for appropriate implementation of the specific corridors. As part of the additional analysis, other corridors should also be identified.

Alternative Transportation Priorities and Action Items

An important priority in the implementation and development of an alternative transportation system is the provision of policies and the assurance of resources for long-term operation and management of this system. It is important that the various park and recreation resources and providers be united in the implementation of an alternative transportation system. Regulatory considerations include common park and recreation policies and procedures, tax rates and fee structures and development of interlocal agreements for management and operations.

Associated policy actions are described in more detail in the Action Plan and include recommendations for establishment of a unified park district representing Cass County Parks Department, Logansport Parks Department and the incorporated towns of Walton and Galveston. The unified park district would be responsible for developing a trails and greenways department under the direction of the local Park Board.

Initial project development for the alternative transportation system should complete development of planned trails, before starting new trails. Examples include expansion of the Logansport trail system into adjacent areas of Cass County connecting to the Wabash River Heritage Trail and Panhandle Pathway. Direct connections between the Panhandle Pathway and France Park, including Wabash River canoe access, should be provided. Cass County officials should actively promote and coordinate with the Wabash River Heritage



Cass County Indiana

Commission for development of the planned Wabash River Heritage Trail in Cass County.

The next priority in development of the alternative transportation system will be providing connections to incorporated towns and schools. This will include implementation of the system from Logansport to Walton and Galveston and connection to and paving of the Panhandle Pathway to Royal Center. Lower priority elements will include implementation of a blueway trail on the Wabash and Eel Rivers and completion of a regional trail network connecting unincorporated towns and outlying community parks.

Thoroughfare development policies

Policies for the thoroughfare system are:

- Manage access along key corridors in the county to balance the roadway and access functions of the corridor.
- Support truck routes that provide appropriate passage for large trucks.

Access Management

Employing access management principles can maintain the function, safety and increase the efficiency of roads by controlling the number, spacing and placement of driveways. The following elements should be considered when reviewing development proposals:

Alternative Access. Side streets, frontage drives, rear service drives, shared driveways and connected parking lots should be used instead of direct access to the main roadway. Where a new development abuts vacant land, future cross-access easements should be secured for future frontage road or service drive connections. Residential subdivisions should make use of frontage roads where homes are intended to face a county road (particularly collector or higher functional class).

Number of Access Points. The number of driveways allowed along major streets affects traffic flow, ease of driving, and crash potential. One driveway should be sufficient to provide reasonable access to most sites; however, large traffic generators may require additional driveways. In such cases, use of side streets or shared

driveways should be encouraged and additional driveways permitted only upon submittal of a traffic impact study that supports the need and only after alternative access options are exhausted. At a minimum, multiple driveways should be adequately spaced from one another.

Driveway Spacing. Driveways should be spaced a minimum 100 feet from one another and 150 feet from intersecting streets along the same side of the road. Where proper spacing cannot be achieved, alternative access or turning restrictions may be necessary.

Truck Routes

To the extent possible, and in cooperation with INDOT, truck routes should be developed to limit the through large truck traffic in downtown areas of Logansport, Galveston, and Walton. Logansport is the primary community needing truck routes to minimize conflicts in the downtown area. These truck routes may use or affect county roads outside the Logansport corporate limits.

Goals and objectives

Goal 1: Provide a world-class county road system connecting economic development centers to the state road network.

- Objective 1A: Promote development of a road system that links dairy operations, ethanol producers, and industrial parks to the state road and highway network with adequate width, depth, and pavement types to support trucking needs of those operations
- Objective 1B: Identify a location for and encourage development of a quality truck stop along the Hoosier Heartland Corridor

Goal: 2 Coordinate transportation systems at the “edges” where jurisdictions meet

- Objective 2A: Continue using a county Capital Improvements Plan to identify transportation priorities, funding sources, and timelines
- Objective 2B: Continue and expand coordination between the highway department, local street departments, and INDOT
- Objective 2C: Continue and expand coordination between the



Cass County Indiana

Cass County highway department and adjacent county highway departments

Goal 3: Encourage implementation and use of transportation alternatives to decrease the growth of automobile use

- Objective 3A: Identify opportunities for increased freight rail traffic originating from and being delivered to locations in Cass County
- Objective 3B: Support infrastructure for alternative fuel vehicles including ethanol, LPG, electricity, and hydrogen as technologies are integrated into the general population
- Objective 3C: Identify opportunities for the airport to play a more significant role in the regional transportation system
- Objective 3D: Support and continue to develop efficient small-scale transit opportunities throughout the county

Goal 4: Promote walking, hiking, biking and other human powered transport by supporting walkways, paths and trails to tie existing communities together through a system of greenways and trails

- Objective 4A: Identify trail systems that would connect existing and proposed trails in Logansport to the larger regional and national trail systems
- Objective 4B: Organize or identify an entity to raise funds and oversee the development and maintenance of the proposed trail and bike route system
- Objective 4C: Support implementation of Safe Routes to School plans and participation in activities that make walking and biking to school safe for students

Goal 5: Respond to the demands of new development without negatively impacting the existing road network

- Objective 5A: Require a traffic impact study for proposed

development anticipated to generate more than 500 vehicle trips per day

- Objective 5B: Require proposed residential and commercial development to provide off-street paths (sidewalks or trails) along collector and arterial roads
- Objective 5C: Require sidewalks in all proposed residential development with a gross density over two units per acre
- Objective 5D: Require developers to provide road improvements to maintain the existing level of service (LOS) if the existing LOS is D-F or not lower than C when the existing LOS is C or above, as identified in a traffic impact study

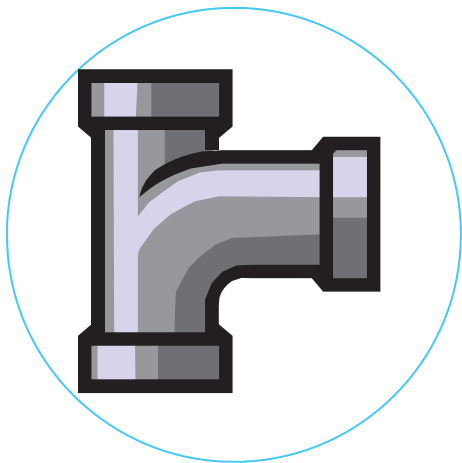


Cass County Indiana

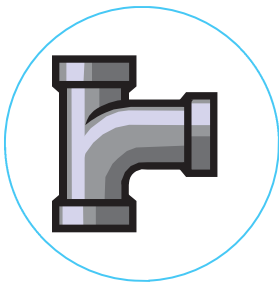
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Public facilities are concerned with the services provided by government to the local residents and businesses including water, wastewater treatment, stormwater management, telecommunications, public safety, fire protection, and public buildings like town halls.

The third component required by Indiana Code 36-7-4-502 is that the comprehensive plan must contain at least: 3) A statement of policy for the development of public ways (Chapter 6: Transportation), public places, public lands (also Chapter 5: Environment), public structures, and public utilities.



Chapter 7: Public Facilities



Cass County Indiana

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Non-transportation infrastructure and community services are another important component of the community. In Cass County, wastewater treatment and protection of ground and surface water resources are particularly important to the local economy and quality of life.

Health

Hospital

Logansport Memorial Hospital is an 83 bed facility located in Logansport. The hospital has a staff of 600 including 36 active staff physicians, 9 associate staff physicians, 3 courtesy staff physicians, and 31 consulting physicians. The hospital offers a full range of health services.

Health Department

The Cass County Health Department is responsible for public health, environmental health, maintenance of vital records, and health education. The department provides immunizations to children and adults.

Nursing Homes

There are four nursing home facilities in Cass County: Camelot Care Center, Chase Center, Miller's Merry Manor, and Woodbridge Health Campus.

Assisted Living

Assisted living facilities in Cass County are: Cass County Home, McKinney House, and Woodbridge Health Campus.

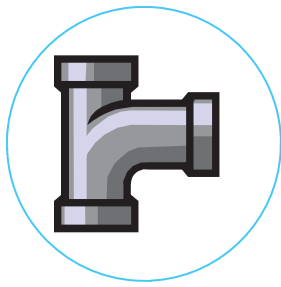
Rural Clinics

There are no rural healthcare facilities in the Indiana Rural Health Clinic Facility Directory.

Community infrastructure

Water

The city of Logansport has a municipal water treatment and distribution system, as do the towns of Galveston, Walton, and Royal Center.



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The city of Logansport has a water plant and a well field to provide water service to the community. The water plant has a capacity of 9 million gallons per day (MGD) and a peak flow of 3.8 MGD. The well field has a capacity of 7 MGD and a peak flow of 3.7 MGD. The combined system average flow is just over 2 MGD. The water plant was built in 1954 and had additional treatment added in 1984 and 2005. The well field was built in 1968 and an additional well was added in 2008.

The Galveston waster treatment plant has a capacity of 504,000 gallons per day and an average flow of 105,000 to 113,000 gpd. The town has improvements in progress in 2009. Walton has a design capacity of .15 million gallons per day, and a peak of .3 mgd. Improvements will be made in 2009. Royal Center has an average flow of 60-70 gallons per day and improvements were made in the early 2000s.

Wastewater

The city of Logansport and the towns of Galveston, Royal Center, and Walton have sanitary sewer systems. All of these systems are combined sewage systems that treat both wastewater and storm runoff.

The Logansport wastewater treatment plant has a capacity of 9 million gallons per day (MGD) dry or 18 MGD wet, with a peak flow of 18 MGD and an average flow of 8.6 MGD. The treatment plant was built in 1958 and additional treatment capacity was added in 1973. The aeration basins and chemical feed were improved in 2003. The service area for the Logansport treatment plant is the city limits. The Logansport system experiences 54 combined sewer overflow (CSO) events per year.

Galveston has experienced problems with its sewer system over the past twenty years, but improvements made in 2007 have resulted in a previous sewer ban being lifted. New connections to the Galveston sewer system are now possible.

Royal Center has a capacity of 200,000 gallons per day (GPD) and a peak flow of 500,000 gpd. The treatment plant was built in 1995 and experiences approximately one CSO event per year.

Walton has a capacity of 150,000 gpd with a peak flow of 300,000 gpd and an average flow of 136,000 gpd. The treatment plant was built in 1968 and was improved in 1979 and 1995. They experience approximately four CSO events per year.

Twelve Mile, Clymers, and Anoka are unincorporated communities without public wastewater treatment systems. In these communities, property owners generally have older septic systems that were installed 20 or more years ago and have not been maintained over time. The failure and risk of failure is high, but the lots are generally too small for a replacement septic system. Alternative wastewater treatment or public sanitary sewers are needed in these communities to address public health concerns and provide for growth. Other unincorporated communities will likely face similar challenges in the near future. Some of the housing areas in unincorporated areas have similar problems with failing or improper septic systems.

Potential solutions are captured in Appendix B.

Stormwater

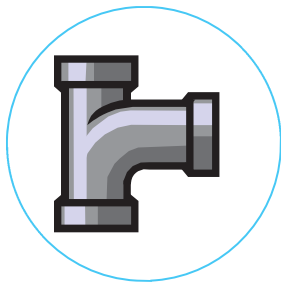
Stormwater is managed through combined sewers where sewers are available and through a series of swales and legal drains in the rural areas of the county. The communities with combined sewers are working on plans for sewer separation to meet state and federal mandates.

In rural areas with swales and legal drains there are routinely flooding problems that lead to road closures. Stormwater recommendations in Appendix ? provide potential solutions.

Gas and Electric

Logansport Municipal Utilities provides electric service in and around Logansport. Duke Energy and several REMCs provide electric service to the areas of the county outside Logansport. The Duke Energy service area includes Galveston, Onward, and Walton. It also includes Royal Center, Lucerne, Leases Corners, Metea, and Twelve Mile. Additional scattered areas are also served by Duke Energy.

NIPSCO provides natural gas to the area, with a large underground natural gas storage facility in the north end of the county.



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Telecommunications

Verizon is the telephone service provider for the county. Cell phone coverage is available throughout the county, and wireless Internet service is available in most areas of the county.

Public Safety

Cass County residents receive their police protection from the county sheriff's department, unless they live in an incorporated community with a police department.

The Cass County Emergency Management Agency (EMA) is responsible for coordinating emergency response for the county.

Fire

County residents receive their fire protection from the Logansport Fire Department or one of the township fire departments. The Logansport Fire Department serves the city of Logansport as well as the unincorporated areas of Eel, Washington, Noble, and Clay townships through contractual agreements.

Public Buildings

There are a number of government-owned buildings in the county. These buildings include the Cass County Courthouse and Justice Center in Logansport, the Logansport City Hall, and the Galveston Town Hall. Each town has a town hall or similar facility.

The county is served by the Logansport-Cass County Public Library. The library has facilities located in Logansport and Galveston.

Schools serve as a source of pride in the community and gathering places for social and cultural events. There are four public school districts that serve the county: Caston School Corporation, Pioneer Regional School Corporation, Southeastern School Corporation, and Logansport Community School Corporation. The school districts are part of a multi-county cooperative with other districts to provide services for special education students.

Goals and objectives

Goal 1: Support sustainable and natural systems for stormwater runoff and wastewater treatment (see Stormwater Fact Sheets 1-5 in Appendix B)

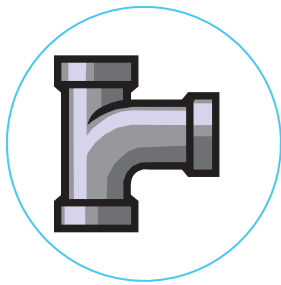
- Objective 1A: Develop stormwater management regulations for sustainable and natural systems
- Objective 1B: Work with IDEM to identify locations where alternative wastewater treatments systems would be supported (See Wastewater Treatment Fact Sheet 1)
- Objective: 1C Work with landowners to implement alternatives where conventional systems are failing (See Wastewater Treatment Fact Sheets 1 and 2)

Goal 2: Improve the quality of surface water and groundwater resources

- Objective 2A: Implement best management practices (BMPs) for stormwater runoff and agricultural runoff (see Stormwater Fact Sheets 1-5)
- Objective 2B: Institute education/awareness programs for promoting good water quality

Goal 3: Ensure capacity of water and wastewater treatment facilities to accommodate growth

- Objective 3A: Support projects to maintain, upgrade, and increase capacity at the Galveston and Walton treatment plants
- Objective 3B: Support analysis and improvements to Royal Center and Walton wastewater facilities and capacity.
- Objective 3C: Research and evaluate the use of alternative wastewater systems for Clymers, Lucerne, Twelve Mile, Anoka and county family dwellings and businesses. (See Wastewater Treatment Fact Sheets 1 and 2)



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Goal 4: Coordinate services across jurisdictional boundaries to ensure efficiency and quality of services

- Objective 4A: Continue to look for operational and economically feasible solutions to governmental services such as partnerships with: highway/street departments, purchasing, planning and zoning, etc.
- Objective 4B: Participate in a program to assist local governments with pooling purchasing power

Additional information

Additional information about sustainable and natural systems for stormwater runoff and wastewater treatment can be found in Appendix B.

In rural counties like Cass County, economic development means the traditional approaches like business recruitment, business retention and expansion, small business development, and workforce development but also includes innovative ways to take local assets and add value to them. Agriculture is a major asset in Cass County, therefore, the focus of the economic development strategy is on value-added agriculture.



Chapter 8: Economic Development



Cass County Indiana

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The Cass County economy has been based in its agricultural heritage and value-added agriculture will continue to be the economic focus of the county. Additionally, supporting existing businesses and recruiting new businesses that are locally appropriate is a part of the economic development strategy.

Economic development policies

Economic development policies are focused on making the most of regional strengths.

- Encourage development of value-added agriculture and agriculture-related industries.
- Participate in the regional economy.
- Support development of a 21st Century workforce.

Goals and objectives

Goal 1: Coordinate efforts to market the region to the global marketplace

- Objective 1A: Promote development at the Grissom Aeroplex
- Objective 1B: Support location of national or international businesses in Cass County and adjacent counties

Goal 2: Focus on continued growth of existing businesses and small businesses in the county

- Objective 2A: Identify the needs of existing businesses and small businesses for growth and expansion
- Objective 2B: Coordinate with Ivy Tech to provide ongoing workforce training and training for small business owners
- Objective 2C: Provide local incentives for retaining jobs and expanding in Cass County
- Objective 2D: Assist entrepreneurs with starting small businesses in the incorporated and unincorporated towns



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Figure 8-1 Terms

- “Low impact development” is a method of site development in which earthwork is minimized, existing runoff conditions are conserved or improved where practicable, stormwater is managed in a distributed manner and as close to its source as possible, and discharges from impervious surfaces are disconnected from the collection system to the extent practicable (see Appendix C).
- The Indiana Shovel-Ready Program is a state program that provides special listing in the state buildings and sites database for completing certain site preparation and ensuring expedited handling when an economic development opportunity arises (see Appendix D).

Goal 3: Invest in industrial parks that are “shovel-ready” and have world-class infrastructure

- Objective 3A: Provide the infrastructure for industrial development ahead of development
- Objective 3B: Ensure infrastructure includes high-quality water, sewer, stormwater management, and telecommunications
- Objective 3C: Focus on low impact development for industrial uses
- Objective 3D: Participate in the state “Shovel-Ready” program

Goal 4: Promote agri-tourism and eco-tourism opportunities

- Objective 4A: Revise zoning and subdivision control ordinances to support retail and restaurant accessory uses to agricultural industries (dairies, etc.)
- Objective 4B: Support development of specialty retail and restaurants in the incorporated and unincorporated towns that feature local foods, agricultural products, crafts, and art
- Objective 4C: Promote outdoor recreation opportunities in the county

Goal 5: Develop a highly-skilled, technology-literate, flexible workforce

- Objective 5A: Coordinate with Ivy Tech to provide workforce training identified as critically needed by local employers and in the regional State of the Workforce report
- Objective 5B: Coordinate with Ivy Tech to provide short-term technology skills sessions

Housing is the second-largest land use in Cass County and the largest land use within the towns. The plan addresses primarily new housing development.



Chapter 9: Housing





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Housing is the largest urban land use in the county, but the majority of the residential development is within the incorporated and unincorporated communities. Future residential development is intended to support existing communities and the type of housing will be dictated by market conditions and local ordinances. Housing was not a significant concern in the planning process, other than its proximity to other development and connection to adequate wastewater treatment.

Housing policies

Housing policies are to strengthen the existing communities and ensure that new housing is adequately supported by public services. These policies are:

- Encourage home maintenance and rehabilitation in existing communities.
- Support infill development in existing communities.
- Encourage new development to be contiguous to existing development and served by public utilities.

Goals and objectives

The housing goal is included in Chapter 3: Land Use, and has been duplicated here.

Goal 1: Recognize and strengthen existing communities

- Objective 1B: Require urban/suburban density residential development, commercial development, and industrial development to be served by water and sewer where available
- Objective 1C: Encourage urban/suburban density residential development, commercial development, and industrial development to use alternative or cluster wastewater treatment systems where public sewers are not available
- Objective 1D: Require a traffic impact analysis for commercial and industrial uses, and residential subdivisions anticipated to generate more than 150 vehicle trips per day



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Sub-areas are smaller areas of the county that need additional focus as a part of the plan. The sub-areas considered for the comprehensive plan were: France Park, Clymers, and blueways.



Chapter 10: Sub-area Plans



Cass County Indiana

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Three areas of the county were selected for additional discussion and focus: France Park, Clymers, and Blueways.

France Park

Existing conditions

France Park is the signature park of the Cass County Parks Department. The park is located along the Wabash River south of US 24 between Logansport and Georgetown. It has a number of interesting features including a waterfall, a 10 acre prairie located in a plateau overlooking the old Kenith Stone Quarry, an 1800s Italian oven that once served as a community resource for the immigrants working on the canal and quarry operations, and fragments of the Wabash and Erie Canal and towpath. There are five trail heads in France Park, totaling five to seven miles of biking and walking trails for a variety of users. The park has 80,000 visitors annually and generates \$210,000 to \$403,000 in revenues.

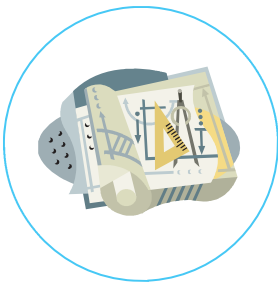
Issues and analysis

Funding is one of the biggest challenges facing the park. Resources for ongoing maintenance and improvements are needed. The current gate fee is \$2 per person. Season passes to the park are \$30 for individuals and \$60 for families. Mountain bikers pay \$7 in gate fees. Camping fees are also very reasonable. France Park is similar in size and scope to some state park facilities. At state parks the daily gate fee is \$4 during the week and \$5 on the weekend for Indiana residents (based on license plates). Non-residents pay \$7 at the gate. Pedestrians and cyclists pay a \$2 gate fee at state parks. Annual passes are \$36 (residents) or \$46 (non-residents) for access to all state parks. Camping fees vary by type of site and day of the week, and are higher for holidays.

Many county residents either take the park for granted or forget that the community has such an asset. Marketing for the park, therefore,

Figure 10-1: Parks & Rec Budget

- County Parks budget is less than \$500,000; 96% is for salaries and benefits, and 20% for services like insurance and utilities.
- Budget includes only \$1,700 for printing—limits marketing abilities
- Budget does not reflect any expenses for capital improvements, and only \$20,000 for maintenance and repairs
- More than 40% of the park budget is generated in revenues.



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becomes an internal and external issue for the county.

Access from the river side of the park is another issue. Trail users (and ultimately blueway users) will want to access the park from the river side, but there is no gate to collect the park fee. Some users feel access from the trails and river should be free, while others believe the park fee is needed. In order to support providing access from the trails and the river and needed facilities to do so, a gate to collect the fee may be needed. The inconvenience of paying the fee is an issue that has been raised, as well.

Connecting the park trail system to the larger city and regional trail system is another issue. The Panhandle Pathway will come within one mile of the park entrance, but connecting the trail to the park could involve contentious land acquisition problems. The statewide trail system map does show the Panhandle connecting to France Park as a future project.

Recommendations

Participants in the France Park focus group had several ideas for addressing the issues facing the park. These include:

- Write articles for newspaper, radio station, those are free advertising.
- Have a Logansport Day or Lawton Day, where people from those communities are free for the day.
- Free Monday early in the season, bus people out to enjoy the park.
- Interns could help for very little cost. Lots of senior projects done at the park.

Other recommendations are:

- Apply for grant funding to support capital projects and park improvements.
- Evaluate fees relative to state fee structure and consider adopting per vehicle fees, rather than per person. Consider different rates for in-county and out-of-county residents.
- Encourage purchase of annual passes. Consider accepting credit

cards for purchases and online camping reservations.

- Install a gate for access on the river side of the park.
- Redesign the France Park web page to focus on the different types of users.
- Negotiate land deal that will allow connection of the Panhandle Pathway to France Park.

Clymers Industrial Park, Hoosier Heartland Corridor and Clymers

The Clymers industrial park was developed by the Cass County Redevelopment Commission in 2005 when it created an economic development plan for the area and declared it an economic development area. This includes creation of a Tax Increment Finance (TIF) district.

The Hoosier Heartland Corridor/SR 25 (see Chapter 6) forms the southern border of the industrial park.

Clymers is an unincorporated town with approximately 25 homes. The town is under the jurisdiction of the Cass County Commissioners.

Existing Conditions

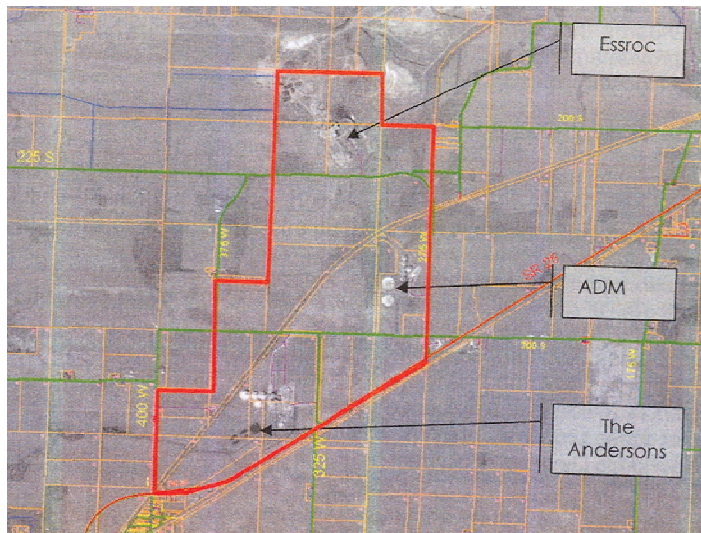
The park includes three companies at this time; ADM, Essrock, and The Andersons.

Each was in the area prior to creation of the TIF district, although The Andersons has expanded since the formation of the district, completing an ethanol plant in 2007.

SR 25 is the current southern border of the industrial park. Access is not controlled from SR 25. Truck traffic volumes are relatively high year-round and are particularly high at harvest time in the fall.

The industrial park does not have public water or sewer; neither do the homes in the town. Homes in town generally have failing septic systems and the lots are too small for replacement systems. New

Figure 10-2: Clymers Industrial Park





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systems are not permitted to be installed where previous systems have failed.

Issues

Lack of public water and sewer were considered by the focus group participants to be major impediments for both the existing businesses and the ability to attract new businesses . The quality of the transportation system and the truck traffic volume were also infrastructure concerns.

Due to public health concerns, continued occupancy of houses where septic failures have occurred may not be possible if those failures cannot be corrected.

Access and land use need to be managed along the corridor to properly balance transportation function and land accessibility in a way that supports economic development. However, there is concern that being overly regulatory will drive away investment from the community.

Figure 10-3 Potential Funding for Wastewater Treatment

- *Community Wastewater & Drinking Water Grant & Loan*
- *Industrial Development Grant Fund (Indiana Economic Development Corporation)*
- *Wastewater State Revolving Loan Fund (Indiana Finance Authority)*
- *Water and Waste Disposal Grants (USDA Rural Development)*
- *Water, Waste Disposal, and Stormwater Guaranteed Loans (USDA Rural Development)*
- *Water, Waste Disposal, and Stormwater Loans (USDA Rural Development)*

While the park has rail access, the fees (especially switching fees) for the short lines make it more cost effective to ship by truck at this time. As the economy shifts, a move toward rail may be desirable; but the switching fees will need to be addressed to make rail a more viable option for businesses in the park.

Recommendations

Recommendations for the Clymers sub-area fall into two broad categories: infrastructure and an overlay district for the corridor.

Infrastructure

The infrastructure issues, particularly sewer, in the area need to be addressed for the community and the industrial park. An infrastructure study is currently underway to identify the feasibility of public systems, and is considering using a force system, rather than a

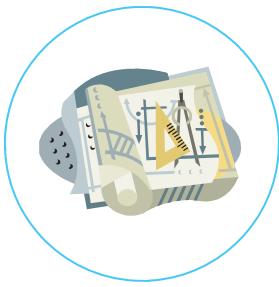
gravity system. The force system may be a better option for the community because of the shallow depths to bedrock and the expense of drilling and lift stations to accommodate a gravity system in that geology.

Any infrastructure project for the area will require “community conversations” or “town hall meetings” with the local residents to present facts, answer questions, and develop an understanding of the project need and associated costs.

Several potential funding sources for a wastewater treatment system exist and are provided in Figure 10-3.

Actions:

- Complete the sewer feasibility study to identify an appropriate system for collection and treatment of wastewater
- Identify a funding source for the improvements
- Hold “community conversations” to discuss proposed project and the associated costs
- Implement a wastewater treatment system
- Study opportunities for a public water supply in the industrial park and town
- Continue to work with INDOT on the configuration of interchanges and access along the Hoosier Heartland Corridor
- Identify needs for road improvements internal to the park and consider using TIF revenue to pay for improvements
- Work with the Logansport Economic Development Foundation (LEDF) to market the site and provide updated information when infrastructure investment is made
- Pursue Shovel Ready certification for the site when infrastructure is in place (see Appendix D)
- Consider expansion of the park south of the Hoosier Heartland Corridor, as infrastructure becomes available and demand for space emerges



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Overlay District

An overlay district is a set of zoning requirements that is added to the base zoning for parcels in a defined area. The overlay district can add regulations to protect the character of an area, or modify the uses to support the type of development desired in a particular area.

The Clymers industrial park will be a key gateway to the Cass County community as the Hoosier Heartland Corridor is completed. Truckers are already familiar with the area and the quality businesses in the park can be used to attract related businesses. Protecting the identity of the park, but making sure the regulatory environment doesn't detract from economic development opportunities is a priority.

The City of Logansport has adopted an overlay district for the portion of the Hoosier Heartland Corridor under their jurisdiction. A similar overlay, appropriate for the character of the Clymers area, would be beneficial for the county.

Actions:

- Adopt an overlay district for the Hoosier Heartland Corridor from the Logansport extra-territorial jurisdiction (east) to the western edge of the Clymers industrial park (west).
- Use parcel lines to define the boundary of the overlay district to support implementation.
- Develop a two-tiered overlay that keeps uses that may have greater impacts (particularly odor) separated from the town.
- Add uses to the overlay district that would be appropriate for the industrial park and corridor such as implement sales and service, truck service, truck stop, truck wash, and related operations.
- Develop local access management standards that require spacing between driveways, shared driveways, and frontage roads.
- Consider adopt the city spacing standards for billboards along the corridor.

Blueways

What are Blueways?

A blueway is a water path or trail developed with launch points, camping locations and points of interest for canoeists and kayakers. See additional information in Chapter 6.

Blueways are typically developed by state, county or local governments to encourage family recreation, ecological education and preservation of our wildlife resources.

Existing Conditions

The Wabash and Eel Rivers are water assets in Cass County that can be used for recreation and tourism, particularly when connected with other county attractions, such as France Park, and trails.

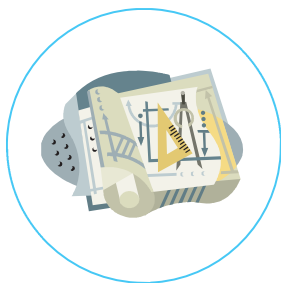
Canoeing is currently popular on the rivers, but the facilities are dated and in need of improvements to attract more users.

Several short trail systems have developed in Cass County, around the confluence of the rivers in Logansport. The River Bluff Trail is complete, the Little Turtle is complete to Berkley and funded from Berkley to the east. The bridge from Riverside Park to River Bluff Trail crossing the river is in final design, and will be under construction soon. Eel River Run (previously called Historic Mill Race Trail) is funded, but not yet constructed. There is an effort to combine these short trails into one system known as the Chief Logan Run.

Plans exist for the Panhandle Path, which will run from Winemac (Pulaski County) to near France Park. The funding for this project is in place and construction has been moved forward from its original timeline. That path will be more than 20 miles long and may eventually connect to a larger regional network of trails. A proposed trail is the Wabash Heritage Trail which will run from Lafayette, through Delphi, into Logansport.

Issues

Existing facilities, including the Adamsboro Canoe Launch, need upgrades to attract a broader range of users and better meet the needs of existing users (see Chapter 5).



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The Panhandle Pathway will not extend all the way to the France Park trail system (and the Wabash River) as currently planned. A connector between the path and the park is needed to create a continuous system attractive to users.

Some of the points of interest to be included in a blueways system include:

- “Big Spring” - the only spring in the county
- Logansport Golf Club
- Georgetown—historic mill site
- The Laborer’s Training Camp which has the largest Blue Heron nesting site in Indiana (80 acres)
- France Park
- Fitches Glen
- Lockport

Other issues identified by the focus group were:

- Not duplicating efforts between the city and the county
- Protecting the Eel River as the drinking water source
- Incorporating events and event needs into the system
 - Improving access points
 - Educating the public about the biological diversity along the river
 - Using interpretive signs as an educational tool
 - Accommodations for tourists/visitors
 - Nurture winter events to sustain businesses off-season

Figure 10-4: Potential Funding for Blueways

- *Land and Water Conservation Fund (Indiana Department of Natural Resources, Division of Outdoor Recreation)*
- *Recreational Trails Program (Indiana Department of Natural Resources, Division of Outdoor Recreation)*
- *Small Watershed Protection and Flood Prevention (USDA Natural Resources Conservation Service)*

Recommendations

Recommendations for a blueways system include providing and managing access, wayfinding, and marketing.

Providing and Managing Access

Launch points, points to pull out, parking areas, and legal access when it is necessary to portage are necessary parts of the blueways system. One of the key issues to be addressed is the relationship between river access to and from France Park and the park's gate fee. Options include a river gate that is staffed, an automated river gate, and allowing park access from the river without paying the gate fee. For either of the options that include a river gate, an annual pass system should be considered to minimize the inconvenience of paying the fee each time.

Wayfinding

In order for the blueways system to be successful, potential users will need to be able to easily find launch points, picnic areas, restrooms, and parking areas on land. They will also need to know where they can pull out and where key destinations are located from the river. This can be accomplished through a unified wayfinding system that ties the system together with signage for the places mentioned above as well as informational signage needed to support the blueway experience.

Marketing

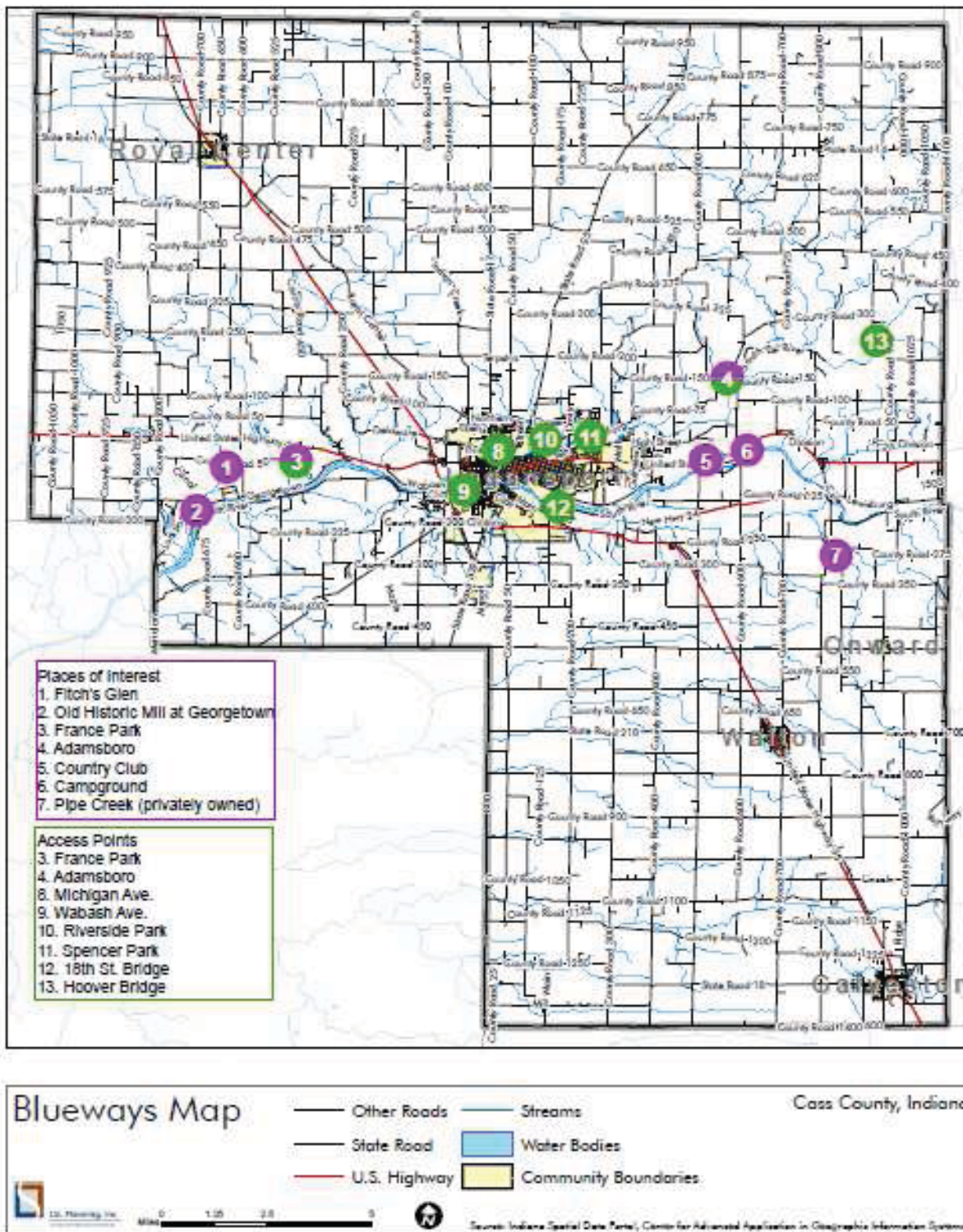
Promoting the blueways system will be important for a successful launch, but also for continued use over time. A map of the key features of the blueway system (launch, parking, picnic, restrooms, destinations, trail connections) available at locations around the county (and around the state at rest areas) is one way to accomplish this ongoing effort.

The initial launch of the blueway system should be celebrated with media announcements and special events to draw attention to the new recreation opportunity in the county.



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Figure 10-5: Blueways Map



Plans should not sit on the shelf, but be the roadmap for implementation. The action plans provide detailed steps, responsible parties, and timelines to help Cass County reach its vision.



Chapter 11: Plan Implementation





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The priorities in the action plans are identified as:

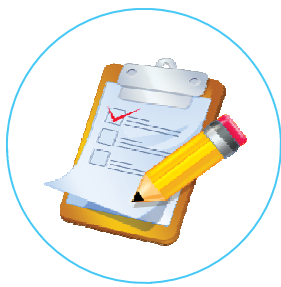
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- Short-term, low-visibility ▲
- Long-term, high-visibility ▼
- Long-term, low-visibility ▲

Low-visibility items are those that are not as visible to the public, but are needed to accomplish the goals of the plan. High-visibility actions will need to be completed periodically to provide something for the community to celebrate. Celebrating the milestones of plan implementation is important to maintaining the momentum for implementation, particularly in the long-term.

Action Plans

Economic Development

Goal 1: Coordinate efforts to market the region to the global marketplace		
<i>Objective 1A: Promote development at the Grissom Aeroplex</i>		
Actions	Responsible Party	Priority
Ensure regional participation in marketing Grissom Aeroplex	LEDf, County Commissioners	▲
Support Grissom committees and boards	LEDf, County Commissioners	▲
Market the Aeroplex as a part of the region	LEDf	▲
Build support for regional approaches to economic development	LEDf, County Commissioners, Mayor of Logansport	▲
<i>Objective 1B: Support location of national or international businesses in Cass County and adjacent counties</i>		
Actions	Responsible Party	Priority
Use tax abatement when appropriate, including clawback provisions to protect the interests of local government and tax payers	LEDf, County Commissioners	▲
Make the Clymers industrial park eligible for and participate in the state “Shovel Ready” program, focusing on agri-business	LEDf, County Commissioners	▲
Engage in the Europe and Asia trade missions to build relationships with international companies	LEDf, County Commissioners	▲



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Goal 2: Focus on continued growth of existing businesses and small businesses in the county

Objective 2A: Identify the needs of existing businesses and small businesses for growth and expansion

Actions	Responsible Party	Priority
Conduct a Business Retention and Expansion Survey	LEDF	▲
Host small business roundtable discussions	LEDF, County Commissioners	▲

Objective 2B: Coordinate with Ivy Tech to provide ongoing workforce training and training for small business owners

Actions	Responsible Party	Priority
Identify the small business programs currently offered by Ivy Tech	LEDF, Ivy Tech, School Districts, Work One	▲
Distribute information about small business programs to local high schools, job centers, and libraries	LEDF, Ivy Tech, School Districts, Work One, Libraries	▲
Identify classes and seminars Ivy Tech can administer to support development of small businesses	LEDF, Work One, Ivy Tech	▲
Deliver classes and seminars and discuss outcomes	Ivy Tech	▲

Objective 2C: Provide local incentives for retaining jobs and expanding in Cass County

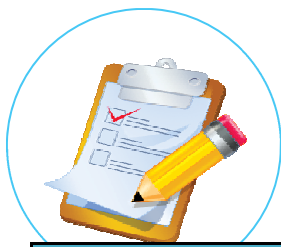
Actions	Responsible Party	Priority
Use tax abatement when appropriate, including clawback provisions to protect the interests of local government and tax payers	LEDF, County Commissioners	▲
Use the Tax Increment Finance (TIF) district to provide infrastructure needed for expansion	LEDF, County Commissioners	▲
Develop partnerships with Ivy Tech and the local school systems for worker re-training as needed	County Commissioners, LEDF, Ivy Tech, School Districts	▲

<i>Objective 2D: Assist entrepreneurs with starting small businesses in the incorporated and unincorporated towns</i>		
Actions	Responsible Party	Priority
Identify small business resources and maintain collection	LEDF, Libraries, Purdue Extension Service, Work One	Short-term, high-visibility
Maintain information sheets and checklists at library, County Extension Office, planning department, etc.	LEDF, Libraries, Purdue Extension Service, Planning Department, Work One	Short-term, low-visibility
Host small business information fairs/workshops	LEDF, Work One, Ivy Tech	Long-term, high-visibility
Provide for home occupations and cottage industries in the zoning ordinance	Plan Commission, County Commissioners	Long-term, low-visibility

Figure 11-1 Terms

- *Clawback: "clawback" is a term used to describe the practice of including provisions in tax abatement agreements that allow the community to recoup abated property taxes if a business fails to meet their obligations set forth in the abatement agreement. For instance, if a company receives a 11-year tax abatement with the promise of creating 100 jobs and only 40 jobs are created, the community may "clawback" 60% of the value of the abatement.*

LEGEND:
Short-term, high-visibility
Short-term, low-visibility
Long-term, high-visibility
Long-term, low-visibility



Goal 3: Invest in industrial parks that are “shovel-ready” and have world-class infrastructure

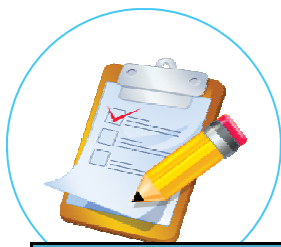
Objective 3A: Provide the infrastructure for industrial development ahead of development

Actions	Responsible Party	Priority
Conduct feasibility studies to identify appropriate systems and funding mechanisms	LEDf, County Redevelopment Commission, County Commissioners	▲
Secure local funding needed for design and implementation	LEDf, County Redevelopment Commission, County Commissioners	▲
Design systems to meet the projected needs of the area	County Commissioners	▲
Fund and implement systems as feasible, including using the Tax Increment Finance (TIF) district	LEDf, County Redevelopment Commission, County Commissioners	▲

Objective 3B: Ensure infrastructure includes high-quality water, sewer, stormwater management, and telecommunications

Actions	Responsible Party	Priority
Provide for public drinking water for the Clymers industrial park	LEDf, County Redevelopment Commission, County Commissioners	▲
Provide for sanitary sewer for the Clymers industrial park	LEDf, County Redevelopment Commission, County Commissioners	▲
Manage stormwater to maximize water quality and minimize flood potential in the Clymers industrial park	LEDf, County Redevelopment Commission, County Commissioners	▲
Ensure telecommunications infrastructure is available at the Clymers industrial park	LEDf, County Redevelopment Commission, County Commissioners	▲

<i>Objective 3C: Focus on low impact development for industrial uses</i>		
Action	Responsible Party	Priority
Encourage siting of buildings that protects natural features and works with the topography of the site	Planning Department	▲
Support use of natural systems for stormwater management whenever appropriate	County Health Department, NRCS	▲
Support building to LEED (Leadership in Energy and Environmental Design) standards	Planning Department	▲
<i>Objective 3D: Participate in the state "Shovel-Ready" program</i>		
Actions	Responsible Party	Priority
Identify local leadership support for the program	LEDF	▲
Secure local commitment to expedited permitting	LEDF	▲
Own or have options on the proposed site	LEDF, County Redevelopment Commission	▲
Have infrastructure in place on site	LEDF, County Redevelopment Commission, County Commissioners	▲
Have a "waters of the state" determination	LEDF, County Redevelopment Commission, County Commissioners	▲
Have topography maps for the site	Planning Department	▲
Complete Phase I (and if needed Phase II) environmental assessments	LEDF, County Redevelopment Commission, County Commissioners	▲
Apply for "Shovel Ready" status	LEDF, County Redevelopment Commission, County Commissioners	▲



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Goal 4: Promote agri-tourism and eco-tourism opportunities

Objective 4A: Revise zoning and subdivision control ordinances to support retail and restaurant accessory uses to agricultural industries (dairies, etc.)

Actions	Responsible Party	Priority
Review and revise zoning ordinance with input from user groups	Planning Department, Plan Commission, County Commissioners	▲
Review and revise subdivision control ordinance with input from user groups	Planning Department, Plan Commission, County Commissioners	▲
Provide training to PC/BZA and local elected officials about the ordinance revisions	Planning Department	▲





Objective 4B Support development of specialty retail and restaurants in the incorporated and unincorporated towns that feature local foods, agricultural products, crafts, and art

Actions	Responsible Party	Priority
Create a “one stop” information stop for starting a small businesses based on agricultural products at the County Extension office	Purdue Extension Service	▲
Identify available locations and contact information for lease/purchase in towns	LEDf, Planning Department	▲
Develop an agricultural business incubator with commercial kitchen facilities	County Redevelopment Commission, County Commissioners	▲
Provide public (city and county) support for farmer’s market	County Commissioners, County Council, Logansport City Council	▲
Encourage faith-based organizations to support community gardens, farmers market (s), and local food initiatives	County Commissioners	▲

<i>Objective 4C: Promote outdoor recreation opportunities in the county</i>		
Action	Responsible Party	Priority
Redesign and update the France Park web page to promote the park and other recreation opportunities in Cass County	France Park Staff	Short-term, high-visibility
Update information on www.indianatrails.org	France Park Staff	Short-term, low-visibility
Get involved with the Indiana Bicycle Coalition through the newsletter and online calendar	France Park Staff, Special interest groups	Short-term, high-visibility
Host a run or bike race event in the county	France Park Staff, Convention & Visitors Bureau, Special interest groups, local businesses	Short-term, low-visibility

Goal 5: Develop a highly-skilled, technology-literate, flexible workforce

<i>Objective 5A: Coordinate with Ivy Tech to provide workforce training identified as critically needed by local employers and in the regional State of the Workforce report</i>		
<i>Actions</i>	<i>Responsible Party</i>	<i>Priority</i>
Review the training needs identified in the State of the Workforce report	LEDF, Work One, Ivy Tech, School Districts	Short-term, high-visibility
Conduct a Business Retention and Expansion Survey to identify additional skill needs	LEDF	Short-term, low-visibility
Identify classes and seminars Ivy Tech can administer to support skills of local businesses	LEDF, Work One, Ivy Tech	Short-term, high-visibility
Deliver classes and seminars and discuss outcomes	Ivy Tech	Short-term, low-visibility

LEGEND:
 Short-term, high-visibility  Short-term, low-visibility 
 Long-term, high-visibility  Long-term, low-visibility 



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Objective 5B: Coordinate with Ivy Tech to provide short-term technology skills sessions

Actions	Responsible Party	Priority
Identify the technology skills programs currently offered by Ivy Tech	LEDF, Work One, Ivy Tech	Short-term, low-visibility
Distribute information about technology programs to local area employers/employees	LEDF, Work One, Ivy Tech	Short-term, high-visibility
Conduct a Business Retention and Expansion Survey to identify additional technology skill needs	LEDF	Short-term, low-visibility
Identify classes and seminars Ivy Tech can administer to support technology skills of local businesses	LEDF, Work One, Ivy Tech	Short-term, low-visibility
Deliver classes and seminars and discuss outcomes	Ivy Tech	Short-term, high-visibility

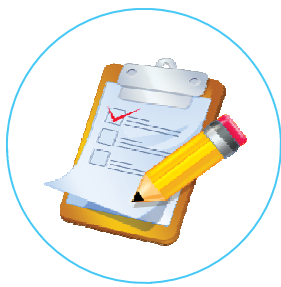
LEGEND:

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Long-term, high-visibility Long-term, low-visibility

Land use

Goal 1: Recognize and strengthen existing communities		
<i>Objective 1A: Direct growth to existing incorporated communities where it can be supported by adequate public utilities</i>		
Actions	Responsible Party	Priority
Revise the Subdivision Control Ordinance to allow one split per 20 acres of land from the parent parcel	Plan Commission, County Commissioners	▲
Revise the Zoning Ordinance to include a rural preservation district to support small farms, large lot residential uses with a gross density of one unit per five acres, and cottage industries	Plan Commission, County Commissioners	▲
Incorporate Twelve Mile as a town	Area residents/leaders	▲
Bring Royal Center, Onward, Walton, and Galveston into an Area Plan Commission with Cass County	County Commissioners, Town Councils	▲
<i>Objective 1B: Require urban/suburban density residential development, commercial development, and industrial development to be served by water and sewer where available</i>		
Action	Responsible Party	Priority
Revise the Subdivision Control Ordinance to require water and sewer service for residential development on lots smaller than two acres, commercial sites, and industrial sites or an alternate approved by the County Health Department and the State of Indiana	Plan Commission, County Commissioners	▲







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Objective 1C : Encourage urban/suburban density residential development, commercial development, and industrial development to use alternative or cluster wastewater treatment systems where public sewers are not available

Actions	Responsible Party	Priority
Develop standards for use and approval of alternative wastewater treatment systems	County Board of Health, Indiana State Board of Health, Indiana Department of Environmental Management	▲
Amend the Subdivision Control Ordinance to allow for alternative systems in areas where conventional systems aren't available, but growth is desirable	Plan Commission, County Commissioners	▲

Objective 1D: Require a traffic impact analysis for commercial and industrial uses, and residential subdivisions anticipated to generate more than 150 vehicle trips per day

Actions	Responsible Party	Priority
Revise the Subdivision Control Ordinance to require traffic impact analysis for residential subdivisions generating more than 150 vehicle trips per day	Plan Commission, County Commissioners	▲
Revise the Subdivision Control Ordinance to require commercial or industrial subdivisions generating more than 150 vehicles per day to have a traffic impact analysis conducted	Plan Commission, County Commissioners	▲

Revise the Zoning Ordinance to require Development Plan Review for all commercial and industrial projects (note that ZO requires development plan review: is this the procedure outlined in IC 36-7-4-1400?)	Plan Commission, County Commissioners	
Require a traffic impact analysis as a part of the Development Plan Review process for commercial and industrial projects anticipated to generate more than 150 vehicle trips per day	Plan Commission	
<i>Objective 1E: Ensure new development doesn't detract from existing development</i>		
Action	Responsible Party	Priority
Adopt a decision-making checklist for recommendation and approval of rezoning requests	Plan Commission, County Commissioners	
Require a market study for large residential subdivisions, commercial, and industrial development proposals	Plan Commission	

<p>LEGEND:</p> <p>Short-term, high-visibility  Short-term, low-visibility </p> <p>Long-term, high-visibility  Long-term, low-visibility </p>
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Objective 1F: Develop and adopt an administrative subdivision review process for lot line corrections, plat corrections, and single splits that do not create buildable lots

Action	Responsible Party	Priority
Revise the Subdivision Control Ordinance to allow for administrative, exempt, subdivisions	Plan Commission, County Commissioners	▲
Assign administrative subdivision review responsibilities to a staff member in the planning department	Planning Department Executive Director	▲
Develop forms for administrative subdivisions	Planning Department Executive Director	▲
Maintain records for all administrative subdivision activity	Planning Department Executive Director	▲

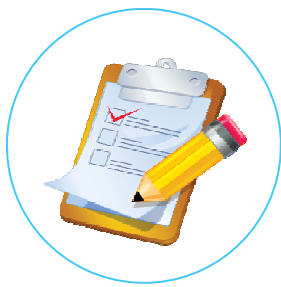
Goal 2: Protect the viability of agricultural operations

Objective 2A: Support agricultural industries

Action	Responsible Party	Priority
Revise zoning ordinance to allow modern agricultural industries as permitted or special exception uses in the agricultural district(s)	Plan Commission, County Commissioners	▲

<i>Objective 2:B Minimize agricultural/non-agricultural use conflicts</i>		
Actions	Responsible Party	Priority
Require a "Right to Farm" declaration to be signed and attached to the deed(s) and plat for residential development in agricultural areas	Plan Commission, County Commissioners	▲
Adopt buffers between agricultural operations and new residential development	Plan Commission, County Commissioners	▲
Use impact on agriculture as a criterion in considering rezoning petitions in agricultural areas	Plan Commission, County Commissioners	▲
<i>Objective: Limit subdivision of agricultural parcels to 1 split per 20 acres</i>		
Action	Responsible Party	Priority
Revise the Subdivision Control Ordinance to allow one split per 20 acres of land from the parent parcel	Plan Commission, County Commissioners	▲

<p>LEGEND:</p> <p>Short-term, high-visibility ▲ Short-term, low-visibility ▼</p> <p>Long-term, high-visibility ▲ Long-term, low-visibility ▼</p>
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Goal 3: Manage development along the Hoosier Heartland Corridor west of SR 29

Objective 3A: Develop and adopt access management standards for the corridor in an overlay district

Actions	Responsible Party	Priority
Develop standards based on best practices and state access management regulation	County Highway Department, Plan Commission, County Commissioners	Short-term, high-visibility
Revise the Zoning Ordinance (as part of an overlay district) and Subdivision Control Ordinance to implement the access management standards	Plan Commission, County Commissioners	Short-term, high-visibility

Objective 3B Adopt sign regulations for the corridor in an overlay district

Actions	Responsible Party	Priority
Develop standards based on best practices, state regulations and case law, and local preferences for sign regulation along the corridor	Plan Commission, County Commissioners	Short-term, high-visibility
Adopt the standards as a part of an overlay district for the Hoosier Heartland Corridor	Plan Commission, County Commissioners	Short-term, high-visibility

LEGEND:

Short-term, high-visibility Short-term, low-visibility

Long-term, high-visibility Long-term, low-visibility

Transportation

Goal 1: Provide a world-class county road system connecting economic development centers to the state road network.		
<i>Objective: 1A Promote development of a road system that links dairy operations, ethanol producers, and industrial parks to the state road and highway network with adequate width, depth, and pavement types to support trucking needs of those operations</i>		
Action	Responsible Party	Priority
Identify the key routes used by trucking-dependent businesses	County Highway Department, LEDF	▲
Revise the county engineering standards to require modern specifications that support higher gross vehicle weights and traffic volumes	County Highway Department	▲
Identify projects, a funding source, and the priority for road improvements supporting existing development	County Highway Department, LEDF, Planning Department	▲
Develop criteria for traffic impact analysis procedures to be conducted as a part of Development Plan Review	County Highway Department, Plan Commission, County Commissioners	▲
Require new development to support anticipated traffic volume and vehicle weights as identified in the traffic impact analysis during Development Plan Review	Plan Commission, County Commissioners	▲
Provide traffic impact analysis to the Highway Department for review as a part of the Development Plan Review	Planning Department	▲



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Objective 1B: Identify a location for and encourage development of a quality truck stop along the Hoosier Heartland Corridor

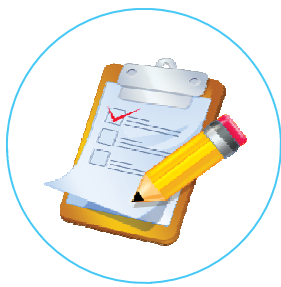
Actions	Responsible Party	Priority
Identify the location criteria for truck stops	LEDF	▲
Identify a preferred location along the Hoosier Heartland Corridor	LEDF	▲
Market the location to the logistics industry	LEDF	▲

Goal 2: Coordinate transportation systems at the “edges” where jurisdictions meet

Objective 2A: Continue using a county Capital Improvements Plan to identify transportation priorities, funding sources, and timelines

Actions	Responsible Party	Priority
Update the CIP annually, planning for a five-year time period	County Highway Department, County Commissioners, County Council	▲
Update the CIP with new funding sources/opportunities as they become available	County Highway Department, County Commissioners, County Council	▲
Include non-motorized transportation projects in the CIP	County Highway Department, County Commissioners, County Council	▲
Coordinate plans with cities and towns	County Highway Department, Town Councils	▲

<i>Objective: 2B: Continue and expand coordination between the highway department, local street departments, and INDOT</i>		
Actions	Responsible Party	Priority
Continue regular coordination sessions between the highway department and Logansport Street Department and towns	County Highway Department, Logansport Street Department, Town Councils	
Continue regular coordination sessions between the highway department and INDOT	County Highway Department, INDOT	
<i>Objective 2C: Continue and expand coordination between the Cass County highway department and adjacent county highway departments</i>		
Actions	Responsible Party	Priority
Continue regular coordination sessions between the highway departments in the region	County Highway Department	
Inform adjacent county highway departments of major local projects within two miles of a county line	County Highway Department	
Goal 3: Encourage implementation and use of transportation alternatives to decrease the growth of automobile use		
<i>Objective 3A: Identify opportunities for increased freight rail traffic originating from and being delivered to locations in Cass County</i>		
Actions	Responsible Party	Priority
Conduct a business retention and expansion (R&E) survey of existing businesses, including opportunities to expand rail use	LEDf	
Inform potential businesses of the rail access available and identify opportunities for rail use	LEDf	



Cass County Indiana

<i>Objective 3B: Support infrastructure for alternative fuel vehicles including ethanol, LPG, electricity, and hydrogen as technologies are integrated into the general population</i>		
Actions	Responsible Party	Priority
Revise uses in the Zoning Ordinance to allow for all types of fueling stations	Plan Commission, County Commissioners	▲
<i>Objective 3C: Identify opportunities for the airport to play a more significant role in the regional transportation system</i>		
Actions	Responsible Party	Priority
Market the capabilities of the airport to prospective businesses	LEDF, Airport Authority	▲
Research the viability of foreign trade zone, inland port, and other state incentive programs for the airport	LEDF	▲
<i>Objective 3D: Support and continue to develop efficient small-scale mass transit opportunities throughout the county</i>		
Action	Responsible Party	Priority
Expand the on-demand bus system to be a county-wide system	County Commissioners	▲
Develop a fixed route bus system as a pilot project	County Commissioners	▲

Goal 4: Promote walking, hiking, biking and other human powered transport by supporting walkways, paths and trails to tie existing communities together through a system of greenways and trails

Objective 4A: Identify trail systems that would connect existing and proposed trails in Logansport to the larger regional and national trail systems

Action	Responsible Party	Priority
Identify road rights-of-way, railroad corridors, utility corridors, or other opportunities for locating trails	Parks Department, Special interest groups	▴

Objective 4B: Identify trail systems and bike routes that connect key destinations in Cass County

Actions	Responsible Party	Priority
Identify key locations to be served by trails	Parks Department, Special interest groups	▴
Identify road rights-of-way, railroad corridors, utility corridors, or other opportunities for locating	Parks Department, Special interest groups	▴

LEGEND:
 Short-term, high-visibility ▴ Short-term, low-visibility ▾
 Long-term, high-visibility ▽ Long-term, low-visibility ▲



Cass County Indiana

Objective 4C: Organize or identify an entity to raise funds and oversee the development and maintenance of the proposed trail and bike route system

Actions	Responsible Party	Priority
Organize as a unit of government or a 501(c)(3) organization	County Commissioners or Special interest group	▲
Solicit grants and raise funds for local match requirements	County Commissioners or Special interest group	▲
Develop a maintenance protocol/program	County Commissioners or Special interest group	▲

Objective 4D: Support implementation of Safe Routes to School plans and participation in activities that make walking and biking to school safe for students

Actions	Responsible Party	Priority
Write letters of support for infrastructure project funding	County Commissioners, Planning Department, County Health Department	▲
Participate in safety education and training	County Commissioners, County Highway Department, County Sheriff, fire departments	▲
Provide support for National Walk to School Day in appropriate areas	County Commissioners, County Council, County departments	▲





Goal 5: Respond to the demands of new development without negatively impacting the existing road network

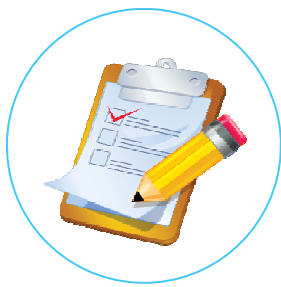
Objective 5A: Require a traffic impact study for proposed development anticipated to generate more than 500 vehicle trips per day

Actions	Responsible Party	Priority
Revise Zoning Ordinance to require Development Plan Approval	Plan Commission, County Commissioners	Short-term, high-visibility
Require a traffic impact study for projects meeting criteria as a part of the development plan review process	Plan Commission	Short-term, low-visibility
Review the requirements annually to monitor effectiveness	Plan Commission	Long-term, high-visibility

Objective 5B: Require proposed residential and commercial development to provide off-street paths (sidewalks or trails) along collector and arterial roads

Actions	Responsible Party	Priority
Revise the Subdivision Control Ordinance to require off-street paths for major subdivisions and non-residential development	Plan Commission, County Commissioners	Short-term, high-visibility
Review the requirements annually to monitor effectiveness	Plan Commission	Long-term, low-visibility

LEGEND:
 Short-term, high-visibility  Short-term, low-visibility 
 Long-term, high-visibility  Long-term, low-visibility 



Cass County Indiana

<i>Objective 5C: Require sidewalks in all proposed residential development with a gross density over two units per acre</i>		
Actions	Responsible Party	Priority
Revise the Subdivision Control Ordinance to require sidewalks for development with a gross density greater than two units per acre when allowed based on sewer availability	Plan Commission, County Commissioners	▲
Review the requirements annually to monitor effectiveness	Plan Commission	▲
<i>Objective 5D: Require developers to provide road improvements to maintain the existing level of service (LOS) if the existing LOS is D-F or of C or better when the existing LOS is C or above, as identified in a traffic impact study</i>		
Actions	Responsible Party	Priority
Revise Zoning Ordinance to require Development Plan Review	Plan Commission, County Commissioners	▲
Require a traffic impact study for projects meeting criteria as a part of the development plan review process	Plan Commission	▲
Require a plan to maintain LOS as a part of the development review process when the criteria are met	Plan Commission, County Commissioners	▲
Review the requirements annually to monitor effectiveness	Plan Commission	▲

Objective 5E: Establish and adopt standards for accepting roads as county public roads (note that this is already done)

Action	Responsible Party	Priority
Establish engineering standards for county roads	County Highway Department	▲
Reference the standards in the Subdivision Control Ordinance	Plan Commission, County Commissioners	▲

LEGEND:
 Short-term, high-visibility ▼ Short-term, low-visibility ▲
 Long-term, high-visibility ▲ Long-term, low-visibility ▼



Cass County Indiana

Public Facilities

Goal 1: Support sustainable and natural systems for stormwater runoff and wastewater treatment

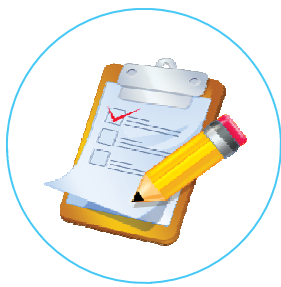
Objective 1A: Develop stormwater management regulations for sustainable and natural systems

Action	Responsible Party	Priority
Review best management practices (BMPs)	County Health Department, NRCS, County Drainage Board, Planning Department	High
Incorporate BMPs in county technical standards manual	NRCS, County Drainage Board, Planning Department	Medium
Encourage and/or provide incentives for utilization of low impact development (LID) practices for stormwater management (See Stormwater Management Fact Sheet 4)	Plan Commission, County Commissioners, County Drainage Board	High
Enforce the new technical standards	NRCS, County Drainage Board, Planning Department	Medium

Objective 1B: Work with IDEM to identify locations where alternative wastewater treatment systems would be supported

Actions	Responsible Party	Priority
Meet with IDEM to discuss potential locations and technologies	County Health Department	High
Identify locations for alternative technologies	County Health Department, Planning Department, County Commissioners	Medium
Secure funding for implementation of projects	County Commissioners	High
Have alternate systems designed and implemented	County Commissioners	Medium
Monitor success of the system	County Health Department	High

<i>Objective: 1C: Work with landowners to implement alternatives where conventional systems are failing</i>		
Actions	Responsible Party	Priority
Develop and distribute educational materials about septic system failure	County Health Department	▲
Host information meetings/booths at community events to distribute information about septic maintenance, septic failure, and alternative systems	County Health Department, County Commissioners	▲
Meet with landowners when an alternative system is proposed to understand their concerns and answer questions	County Health Department, County Commissioners	▲
Goal 2: Improve the quality of surface water and groundwater resources		
<i>Objective 2A: Implement best management practices (BMPs) for stormwater runoff and agricultural runoff</i>		
Actions	Responsible Party	Priority
Identify BMPs to be incorporated into the county technical standards manual	NRCS, Planning Department	▲
Emphasize the use of low impact development (LID) practices to minimize stormwater and agricultural runoff (See Stormwater Management Fact Sheet 4)	Planning Department, Plan Commission	▲
Adopt revisions to the technical standards	Plan Commission, County Commissioners	▲
Educate the development and agricultural communities about BMPs	NRCS, Purdue Extension Service	▲
Enforce new technical standards	Planning Department	▲



Cass County Indiana

Objective 2B: Institute education/awareness programs for promoting good water quality

Actions	Responsible Party	Priority
Review materials designed by agencies and other communities	NRCS, County Health Department	Short-term, high-visibility
Identify a funding source and develop a budget for education/awareness programs	NRCS, County Health Department	Short-term, low-visibility
Determine priorities and programs	NRCS, County Health Department	Long-term, high-visibility
Produce materials for the selected programs	NRCS, County Health Department	Short-term, low-visibility
Implement programs and evaluate regularly	NRCS, County Health Department	Long-term, low-visibility

LEGEND:

Short-term, high-visibility Short-term, low-visibility

Long-term, high-visibility Long-term, low-visibility

Goal 3: Ensure capacity of water and wastewater treatment facilities to accommodate growth

Objective 3A: Implement projects to maintain, upgrade, and increase capacity at the Galveston and Walton treatment plants

Actions	Responsible Party	Priority
Educate local residents and businesses about reducing water and wastewater treatment consumption	Town Councils, NRCS	▲
Conduct routine maintenance to minimize capacity loss due to deferred maintenance (infiltration, inflow)	Town Councils	▲
Identify needed capacity improvements	Town Councils	▲
Fund system improvement design and implementation	Town Councils	▲
Develop ongoing maintenance protocols	Town Councils	▲

Objective 3B: Identify inflow and infiltration problems and implement repairs in Royal Center and Walton

Actions	Responsible Party	Priority
Conduct an infiltration and inflow assessment to identify the location of problems and potential solutions	Town Councils	▲
Educate homeowners and businesses about ways to reduce inflow	Town Councils, NRCS	▲
Identify funding source, design solutions, and implement repairs	Town Councils	▲



Cass County Indiana




Objective 3C: Consider developing cluster systems to serve Clymers, Lucerne, Twelve Mile and Anoka (See Wastewater Treatment Fact Sheets 1 and 2)

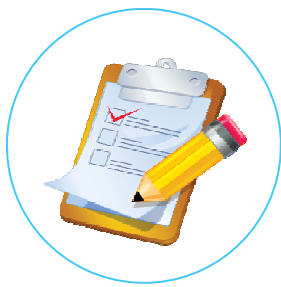
Actions	Responsible Party	Priority
Research potential solutions for each community's wastewater needs	County Health Department, NRCS, County Commissioners	Short-term, high-visibility
Discuss alternative systems with the Indiana Department of Environmental Management	County Health Department, NRCS, County Commissioners	Short-term, low-visibility
Identify a funding source for design and construction of the systems	County Commissioners	Long-term, high-visibility
Develop a strategy for ongoing maintenance	County Health Department, IDEM	Short-term, low-visibility
Educate the public about the locally chosen system	County Health Department	Long-term, low-visibility

LEGEND:


Short-term, high-visibility Short-term, low-visibility

Long-term, high-visibility Long-term, low-visibility





<p>Recommendation for Clymers: The community of Clymers has very little topographical relief, and could potentially be served by a cluster system utilizing pressurized or vacuum sewer. If septic tanks are still functional, a pressurized sewer system may be installed to deliver septic tank effluent to the onsite wastewater treatment system. If septic tanks are failing and cannot be restored by clean-out, a vacuum sewer system may be the preferred alternative as it enables abandonment of the septic system. The configuration of the ecological waste treatment system (e.g. subsurface flow media filter) will depend on the characteristics of the waste, i.e. whether removal of solids in individual septic tanks is part of the process. A detailed investigation of soils, hydrology, setbacks, and land use and availability would need to be conducted to verify feasibility of an on-site wastewater treatment system. Sanitary wastewater from the industrial park in Clymers could potentially be managed using the same system.</p>	<p>County Commissioners</p>	
<p>Recommendation for Lucerne: The community of Lucerne has very little topographical relief, and the recommendation would be as above for Clymers.</p>	<p>County Commissioners</p>	
<p>Recommendation for Twelve Mile: The community of Twelve Mile has a small amount of topographical relief. If septic tanks can still be utilized, a portion of the system may accommodate gravity collection of septic tank effluent, in combination with a small lift station to deliver the wastewater to the treatment system. The recommendation above for Clymers is also relevant for Twelve Mile.</p>	<p>County Commissioners</p>	



Cass County Indiana

<p>Recommendation for Anoka: The community of Anoka has a small amount of topographical relief. If septic tanks can still be utilized, a portion of the system may accommodate gravity collection of septic tank effluent, in combination with a small lift station to deliver the wastewater to the treatment system. The recommendation above for Clymers is also relevant for Anoka.</p>	<p>County Commissioners</p>	
<p>IDEM requires closing of septic systems that are going to be abandoned, according to guidelines provided in 327 IAC 7.1 4-11. ISDH also provides a protocol for proper abandonment of septic systems. Details can be found at the following website: http://www.in.gov/isdh/files/abandon_onsite_systems.pdf</p>		

LEGEND:

Short-term, high-visibility  Short-term, low-visibility 
 Long-term, high-visibility  Long-term, low-visibility 

Goal 4: Coordinate services across jurisdictional boundaries to ensure efficiency and quality of services

Objective 4A: Continue to look for operational and economically feasible solutions to governmental services such as partnerships with: highway/street departments, purchasing, planning and zoning, etc.

Actions	Responsible Party	Priority
Where partnerships are feasible, enter into interlocal agreements that address issues including staffing, budget, level of service, operations, and oversight.	County Departments, Logansport Departments, County Commissioners, County Council, Mayor of Logansport, Logansport City Council	▲
Educate the public about the proposed partnerships through community meetings, newspaper articles, and public service announcements	County Commissioners, Mayor of Logansport, Logansport City Council	▲
Evaluate the costs, savings, and operations of partnerships for the first five years of operation	County Commissioners, County Council, Logansport City Council, Mayor of Logansport	▲

Objective 4B: Participate in a program to assist local governments with pooling purchasing power

Actions	Responsible Party	Priorities
Identify a program that meets the needs of Cass County governmental agencies for pooled purchases	Department Heads, County Commissioners, County Council	▲
Participate in the selected program; Evaluate the costs, savings, and quality of service on an annual basis	Department Heads, County Commissioners, County Auditor, County Council	▲

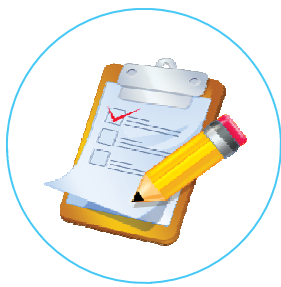


Cass County Indiana

Parks and Recreation

Goal 1: Continue to invest in and improve existing county parks		
<i>Objective 1A: Implement the recommendations of the parks and recreation plan</i>		
Actions	Responsible Party	Priority
Conduct an annual evaluation of progress made on implementing the parks and recreation plan	Parks Board	High
Revise the plan and submit to the Indiana Department of Natural Resources every five years	Parks Board	High
<i>Objective 1B: Implement the recommendations of the France Park subarea plan</i>		
Actions	Responsible Party	Priority
Connect the park to the trail system via the Panhandle Pathway	Trail group	High
Serve as a launch point for a Blueways system	Parks Department	High
Study funding options including tax levy, innkeeper's tax, gate fees, annual passes, etc.	Parks Board	High
Market the park to county residents through the website, newspaper articles, etc.	Parks Department	High
Identify projects that could be done by volunteers, interns, service clubs or as senior projects	Parks Department	High
Address gate fees for trail and blueway access at the river	Parks Board	High
<i>Objective 1C: Improve park site entrances with new signage and landscaping</i>		
Design entrance signs that are informative, welcoming, and uses sustainable, local materials	Parks Department	High
Design a landscape plan for the sites that uses low-maintenance, native plants	Parks Department	High

Fund and install site improvements	Parks Board	▲
Develop a protocol for ongoing maintenance	Parks Department	▲
<i>Objective 1D: Make improvements to the site facilities</i>		
Actions	Responsible Party	Priority
Conduct a user survey to identify the priority facilities	Parks Department	▲
Select equipment made locally and/or from sustainable materials	Parks Department	▲
Identify funding sources and purchase/install equipment	Parks Board	▲
Develop a protocol for ongoing maintenance	Parks Department	▲
<i>Objective 1E: Identify the theme/vision for select parks</i>		
Actions	Responsible Party	Priority
Conduct a workshop with stakeholders to explore theme and vision possibilities; prioritize results	Parks Department	▲
Develop a draft theme/vision based on input	Parks Department	▲
Provide an opportunity for comment	Parks Department	▲
Adopt the theme/vision for the parks	Parks Board	▲
Identify historic sites and provide signage, refurbishing the existing signage as needed	Parks Department	▲



Cass County Indiana

Objective 1F: Prepare site development plans with implementation strategies for select parks

Actions	Responsible Party	Priority
Develop site alternatives based on the identified theme and vision	Parks Department	High
Conduct a workshop for discussion of alternatives and selection of a preferred alternative	Parks Department	Medium
Identify implementation strategies for the site plan including the responsible party and timeline	Parks Department	High
Approve the site development plan	Parks Board	Medium

Goal 2: Support the development of neighborhood or community scale parks to serve the unincorporated towns

Objective 2A: Identify recreation needs in the unincorporated towns

Actions	Responsible Party	Priority
Conduct a survey in each town to determine the recreation needs	Parks Department	Short-term, high-visibility
Communicate the results to the community through town meetings	Parks Department	Short-term, high-visibility

Objective 2B: Develop a plan for land acquisition and park development consistent with identified needs

Actions	Responsible Party	Priority
Include development of community and neighborhood scale parks in the next County Five-Years Parks and Recreation Plan	Parks Department and Parks Board	Short-term, high-visibility
Identify the location, size, and cost of acquisition for needed parks	Parks Department	Short-term, high-visibility
Pursue grant funding and local match money to acquire land and develop parks according to the needs identified and included in the plan	Parks Department and Parks Board	Short-term, high-visibility
Include a plan for ongoing maintenance and operations in development of new parks	Parks Department	Short-term, high-visibility

LEGEND:

- Short-term, high-visibility 
- Short-term, low-visibility 
- Long-term, high-visibility 
- Long-term, low-visibility 



Cass County Indiana

Goal 3: Develop a recreational trail system that connects key destinations in the county while contributing to the regional trail network

Objective 3A: Establish or identify an organizational structure for the planning, funding, and development of trails in Cass County

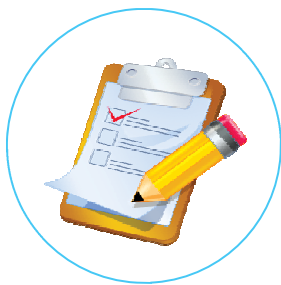
Actions	Responsible Party	Priority
Review existing bodies for mission and capacity	County Commissioners	High
Review rules of potential funding sources for organizational structure and management	County Commissioners	Medium
Designate a body for planning, funding, and developing trails	County Commissioners	High
Include blueways in the trail planning process	County Commissioners, Parks Board	Medium

Objective 3B: Identify the land, right-of-way, or easement acquisitions needed for proposed trails as part of an engineering design phase

Actions	Responsible Party	Priority
Identify ownership status of parcels along preferred route	County Commissioners	High
Identify needed land and access	County Commissioners	Medium
Secure appropriate access through land purchase or acquisition or easements	County Commissioners	High
Address gate fees for France Park access near river	Parks Board	Medium

<i>Objective 3C: Build and maintain the Cass County trail system</i>		
Actions	Responsible Party	Priority
Secure funding for the trail system construction	County Commissioners, County Council	▲
Select contractors and oversee the construction process	County Commissioners	▲
Celebrate the opening of significant segments	County Commissioners, Parks Board, Chamber of Commerce	▼
Develop a plan for ongoing operations and maintenance	Parks Department	▲
Consider using a volunteer ranger program to assist with trail maintenance and patrol	Parks Department	▼
<i>Objective 3D: Develop a blueways system for Cass County</i>		
Actions	Responsible Party	Priority
Secure access for launch and pull-out points along the river, addressing portage access at dam	Parks Board, County Commissioners	▲
Address gate fees for France Park related to trail and blueway access	Parks Board	▲
Develop and place appropriate wayfinding information for launch points and points of interest on land and along the river	Parks Board, County Commissioners	▼
Develop a blueways map to be available at the visitor's bureau, chamber of commerce, libraries, parks, and government offices	Parks Board, Chamber of Commerce	▼

LEGEND:
 Short-term, high-visibility ▲ Short-term, low-visibility ▼
 Long-term, high-visibility ▼ Long-term, low-visibility ▲



Cass County Indiana

Housing

Goal 1: Recognize and strengthen existing communities





Objective 1A: Require urban/suburban density residential development, commercial development, and industrial development to be served by water and sewer where available

Action	Responsible Party	Priority
Revise the Subdivision Control Ordinance to require water and sewer service for residential development on lots smaller than two acres, commercial sites, and industrial sites or an alternate approved by the County Health Department and the State of Indiana	Plan Commission, County Commissioners	▲

Objective 1B: Encourage urban/suburban density residential development, commercial development, and industrial development to use alternative or cluster wastewater treatment systems where public sewers are not available

Actions	Responsible Party	Priority
<i>Develop standards for use and approval of alternative wastewater treatment systems</i>	<i>County Board of Health, Indiana State Board of Health, Indiana Department of Environmental Management</i>	▲
Amend the Subdivision Control Ordinance to allow for alternative systems in areas where conventional systems aren't available, but growth is desirable	Plan Commission, County Commissioners	▲

<i>Objective: 1C Require a traffic impact analysis for commercial and industrial uses, and residential subdivisions anticipated to generate more than 150 vehicle trips per day</i>		
Actions	Responsible Party	Priority
Revise the Subdivision Control Ordinance to require traffic impact analysis for residential subdivisions generating more than 150 vehicle trips per day	Plan Commission, County Commissioners	Short-term, high-visibility
Revise the Subdivision Control Ordinance to require commercial or industrial subdivisions generating more than 150 vehicles per day to have a traffic impact analysis conducted	Plan Commission, County Commissioners	Short-term, low-visibility
Revise the Zoning Ordinance to require Development Plan Review for all commercial and industrial projects (note that ZO requires development plan review: is this the procedure outlined in IC 36-7-4-1400)	Plan Commission, County Commissioners	Short-term, high-visibility
Require a traffic impact analysis as a part of the Development Plan Review process for commercial and industrial projects anticipated to generate more than 150 vehicle trips per day	Plan Commission	Short-term, low-visibility

LEGEND:
 Short-term, high-visibility  Short-term, low-visibility 
 Long-term, high-visibility  Long-term, low-visibility 



Cass County Indiana

Zoning Recommendations

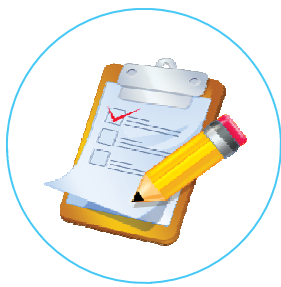
The following review is intended to highlight inconsistencies with current state statutes, best practices, and the goals and objectives of the comprehensive plan. It lays the foundation for revisions to the zoning and subdivision control ordinance, but does not replace the process to review, revise, and formally amend those ordinances. Where an article or section is not mentioned, no revisions were identified.

Zoning ordinance review—Cass County

Article 2 – Definitions

- The best practice is for the definitions to be placed at the rear of the zoning ordinance, and for all definitions to be in a single article. Consider moving the definitions article and incorporating the definitions from the Floodplain Overlay District article.
- The adult business definition does not reflect best practices, consider revising.
- Definitions should not include regulatory language. Remove regulatory provisions from the following definitions:
 - Agriculture
 - Agri-business
 - Dwelling, Single-Family Attached
 - Engineering, Research, and Development Laboratories
 - Manufactured Home
 - Screening
 - Remove “public service” from the definition of alley
 - Remove the timeframe from the definition of automobile impound. Add time limit to Development Standards article.
 - The word buffer is used in the definition of buffer.
 - Not all cabins and cottages are of simple design. The ownership is irrelevant to zoning. Revise.
 - Child Care Home – reference the appropriate state statute for definition

- The Indiana General Assembly recodified several parts of the Indiana Code. Replace the cross-references for:
 - Children’s Home
 - Condominium
 - Day Care Center
 - Family
- The definition of comprehensive plan includes the adoption date for the existing plan, this will need to be updated or revised.
- Confined feeding – consider using the Indiana Department of Environmental Management (IDEM) definition.
- Regulations should not be cross-referenced in the Definitions. Remove references to Table A in:
 - *Convenience Store*
 - *Craft/Hobby Shop*
 - *Residential Facility*
 - *Special Exception*
- The name of the state department regulating day care has changed.
- The definition of development requirement is awkward.
- For Dwelling, Multi-Family/Apartment either remove the reference to a shared entrance or add the possibility of private entrances.
- Update the definition of Essential Services to include fiber and other telecommunications infrastructure.
- Under Home Child Care, the state agency is no longer called Public Welfare.
- In the definition of intensity, remove the last sentence.
- “Pipestem” lots are commonly referred to as “flag” lots and are typically discouraged/not permitted.
- Remove the language referring to PL 360 under Manufactured Home.
- In Light Manufacturing the last sentence needs to refer to Heavy Manufacturing.



Cass County Indiana

- Separate the definition of Occupancy from Certificate of Occupancy, or eliminate Occupancy from the heading.
- Performance guarantees – remove reference to PUDs – apply to subdivisions as well.
- Under School, remove the outdated reference to the State Department of Public Instruction.
- Add a definition(s) for Wind Energy Conversion Systems (WECS)

Article 3 – District Regulations

- 301.02 – may want to allow the administrator to make interpretations, which can then be appealed to the BZA as needed.
- 302.01 – remove the density of 1 unit per acre from Agriculture. Remove the reference to PUD as well.
- 302.06 – Consider removing the agri-business district and putting those uses in industrial districts.

Table A

- Consider changing farm business to an accessory use, rather than permitted. Consider allowing farm business as a permitted use, rather than a special exception use, in the Agriculture district.
- Consider changing irrigation facilities to an accessory use.
- Consider moving the agri-business uses to permitted uses in the industrial districts.
- Do not permit subdivisions in Agriculture even as a special exception use.
- Do not permit single-family attached homes, duplexes, or multi-family as special exceptions in the Agriculture district
- Consider changing the cabin/cottage to a special exception use in Agriculture.
- Consider making accessory apartments a special exception in Agriculture and Rural Residential districts.
- Consider consolidating the uses to broader categories, rather than listing specific uses.

- Make drive-through uses a special exception use in the industrial districts.
- Stables should be permitted uses in the Agriculture district

Table B

- Establish a larger minimum lot size and/or change the Subdivision Control Ordinance to permit only one split per 20 acres.
- Consider not permitting centralized sewage systems in the Agricultural district.
- How do the “no central sewage” lot sizes relate to Health Department standards?
- The minimum lot sizes for industrial should be significantly larger.
- 305.03 – Consider not allowing “pipestem” lots and requiring a variance if one is desirable to protect natural resources.
- 301.01 – Consider adding non-commercial WECS to the items exempted from height limitations.
- 309 – Do you have the technical capacity to enforce the performance standards?
- 312 – Have you used this to date?

Article 4 – Overlay District Regulations

- All definitions should be in the Definitions article.
- Consider restricting new development and subdivisions in the Floodplain Overlay District.

Article 5 – Development Standards

- A number of references to Indiana Code need to be updated to reflect the recodification of the statutes:
 - 502
 - 504.9
 - 506
 - 510
 - 517.03
 - 518



Cass County Indiana

- 505.03(E) – Consider adopting the same spacing standard as the City of Logansport.

Article 8 -

- 808 – Seems duplicative of Article 4 in terms of the variance requirements.

Subdivision control ordinance review—Cass County

Article 1 - ?

- 118 – reference to an Indiana Code that has been repealed.

Article 2 – Definitions

- Definitions should be moved to the end of the ordinance.

Article 3 - ?

- 307.02 – Minor subdivisions can be done with a single step process, consider revising.

Article 5 - ?

- 510 – Consider removing the ability to do “Pipestem” lots.
- 511.13 – Why are alleys discouraged?
- Add a requirement for Traffic Impact Studies
- 512.01(B) – Amend to 2 gross lots per acre.
- Add review by a technical advisory committee including the County Health Department

General recommendations

Some provisions (highlighted in the review of the zoning ordinance) do not reflect the best practices in zoning that are currently available. As the zoning ordinance is updated, it will be important to review and revise language related to adult businesses and Wind Energy Conversion Systems. Additionally, references to Indiana Code should be revised since the state has recodified much of the law in recent years and the names of state agencies have changed over time.

The zoning ordinance revision process should incorporate a technical committee that can advise the staff (and consultant) on the locally preferred tools and techniques as well as a steering committee that can assist the staff with policy direction.

During an overall revision of the zoning ordinance and subdivision control ordinance, the appearance and user-friendliness of the document should be considered. Graphics, charts, tables, and color-coding can improve the readability of the ordinances for a variety of users.

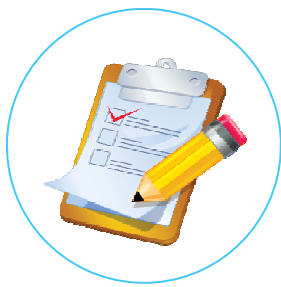
Recommendations to implement the comprehensive plan

Several action steps in the plan refer to changes needed to the zoning and subdivision control ordinances to implement the goals of the comprehensive plan. These actions are provided here to facilitate revisions to the ordinance and provide additional information where needed.

Zoning Ordinance

The actions that recommend changes to the zoning ordinance are:

- Create a rural preservation district to support small farms and large lot residential areas with a gross density of one unit per acre. This type of development would be supported by a cluster or package wastewater treatment system or connected to a public sewer system, but would support more moderate lot sizes and the rural character desirable in the area.
- Require Development Plan Review (under IC 36-7-4-1400 series) for commercial and industrial projects.
- Require traffic impact analysis as part of the Development Plan Review for commercial and industrial projects anticipated to generate 150 vehicle trips per day. The traffic impact analysis should be developed by a Professional Engineer and meet standards acceptable to the County Highway Department.
- Require a market study for large residential subdivisions, commercial, and industrial development. The intent is to demonstrate the feasibility of the project and minimize partially built subdivisions and vacant buildings.
- Allow modern agricultural industrial as permitted or special exception uses in the agricultural districts. Examples would include ethanol production, dairies, and wind farms.
- Develop an overlay district for the Hoosier Heartland Corridor.



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An overlay district would add another layer of standards to the base zoning districts along the corridor to promote the uses, setbacks, building materials, landscaping, and signs that are desired for the signature gateway corridor.

- Require all proposals for Development Plan Review to be submitted to the Health Department for review.
- Support LEED standards
- Encourage siting of buildings in a way that protects natural features. A variety of tools can be used to implement this including tree preservation standards, landscape credits for maintaining existing vegetation, and other incentives.

Subdivision Control Ordinance

Similarly, there are modifications to the subdivision control ordinance that are recommended to implement the goals and objectives of the comprehensive plan, including:

- Revise the subdivision standards for agricultural areas to allow only one lot split per 20 acres.
- Require water and sewer service for residential development on lots smaller than two acres.
- Develop standards for use and approval of alternative wastewater treatment systems.
- Allow alternative systems where conventional systems aren't available.
- Require traffic impact analysis for residential subdivisions generating more than 150 vehicle trips per day.
- Require traffic impact analysis for commercial and industrial subdivisions generating more than 150 vehicle trips per day.
- Allow for exempt and administrative subdivisions. This is particularly useful for lot line corrections, lot consolidation, and splits to transfer property for agricultural purposes that will not result in building.
- Require "Right to Farm" declarations in agricultural areas. This serves as a form of notice for residential property owners in

agricultural areas that farmers are protected from nuisance suites over normal agricultural practices, including generating light, noise, and odor.

- Require access management wherever feasible.
- Require all subdivision proposals to be reviewed by the Health Department.

Key Terms and Concepts

Some key terms and concepts have been used in this chapter that require greater explanation.

- **Access Management:** The process of providing and managing access to land development while preserving the regional flow of traffic in terms of safety, capacity, and speed. Techniques include driveway spacing, shared driveways, use of medians, right-turn-in and right-turn-out limitations, and the like.
- **Alternative and natural wastewater systems (also ecological treatment systems):** Ecological Treatment Systems (ETS), including constructed wetlands and subsurface flow media filters, may be a desirable choice for sites where sewer infrastructure is lacking or inadequate, and where an alternative to traditional septic systems is sought or required.
- **LEED (Leadership in Energy and Environmental Design):** LEED is an internationally recognized certification system that measures how well a building or community performs across all the metrics that matter most: energy savings, water efficiency, CO₂ emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

Developed by the U.S. Green Building Council (USGBC), LEED provides building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

- **“Right to Farm” declaration:** A declaration that a property owner/purchaser is aware of the law intended to protect farmers from nuisance lawsuits,



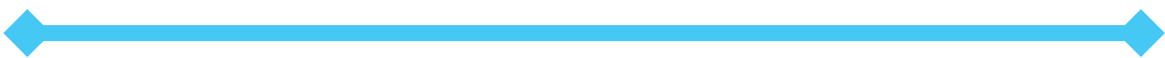
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- Traffic Impact Analysis: An analysis of the effect of traffic generated by a development on the capacity, operations, and safety of the public street and highway system.
- Wind Energy Conversion Systems: Any mechanism or device used for the purpose of converting wind energy into electrical or mechanical power.

The comprehensive plan was developed with participation of local people including a steering committee, interviews with key individuals, Public Workshops-in-a-Box™, and public meetings.



Appendix A: Public Participation





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Community interviews

Interviews with key community stakeholders were held on October 22, 2008 and November 10, 2008. The statements from the individual interviews are confidential, but the insights gained from these interviews have been incorporated into the goals and objectives of the plan.

Public Workshop-in-a-Box™

Public Workshop-in-a-Box™ kits were available at the following locations:

- Royal Center Town Hall
- Walton and Tipton Township Library
- Community State Bank in Twelve Mile
- Logansport Public Library
- Cass County Government Building

The kits were available in English and Spanish and an ad was published about their availability in both languages. Few people participated in this manner.

Public meetings

Walton Public Open House

A public open house was held in Walton on January 27, 2009 at the library. Participants were asked to review information at “stations” covering land use, economic development, transportation, parks and recreation, and community facilities and comment on the goals and objectives proposed by the steering committee. The participants were also asked to comment on the vision statement. Weather limited participation in this meeting, but the comments received were incorporated into the plan elements with the results from the other open house.

Twelve Mile Public Open House

A similar public open house was held at the Twelve Mile Community Center on January 29, 2009. Again, participants were asked to review information at “stations” covering land use, economic





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development, transportation, parks and recreation, and community facilities and comment on the goals and objectives proposed by the steering committee. The participants were also asked to comment on the vision statement. Comments from this open house were incorporated into the plan elements.

Environmental issues including wastewater treatment, stormwater, and low-impact development were important during the planning process. This appendix contains fact sheets referenced in the plan.



Appendix B: Environmental Facts



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STORMWATER QUALITY MANAGEMENT, CASS COUNTY, IN: INTRODUCTION

The purpose of these fact sheets is to facilitate the implementation of effective, ecological stormwater quality management strategies. The strategies described are appropriate to rainfall and soil characteristics in Cass County, Indiana, and can help protect and maintain surface water bodies and groundwater aquifers. The methods described can promote the creation of sustainable Best Management Practices (BMPs) that do not necessarily require intensive maintenance, and that can provide aesthetic and ecological benefits to the community.

Stormwater BMPs can be divided into three major classifications: wet detention, infiltration, and low impact development practices. Wet detention BMPs, primarily designed as settling ponds or constructed wetlands, are generally characterized by a permanent pool of water and detention of the treatment volume for a design period of time.

Sediments are stored below normal pool elevation. Infiltration BMPs are located over permeable soil and/or an underdrain system, and treat runoff through vertical subsurface filtration. Common types of infiltration/filtration BMPs are rain gardens, bioretention areas, and extended dry detention basins. Long-term vertical infiltration pathways are typically kept open through the establishment of vegetative root channels. Low impact development (LID) combines structural BMPs and pre-construction design practices to help minimize stormwater runoff volume, distribute storage of runoff throughout the site, and disconnect direct discharges from impervious surfaces to the stormwater management system.

In addition to the three categories of stormwater BMPs described above, a fact sheet on Green Roofs is included as a supplement. Green roofs can be utilized in new construction and redevelopment projects to improve stormwater management, reduce heating and cooling costs, prolong the lifetime of roofs, and provide aesthetic appeal.

STORMWATER MANAGEMENT: POLLUTANTS OF CONCERN

The Indiana Department of Environmental Management (IDEM) considers Total Suspended Solids (TSS) to be the default pollutant of concern in stormwater runoff. Total Suspended Solids include organic and inorganic materials, such as soil, plankton, and industrial wastes, suspended in water. TSS can clog streams, block sunlight, and inhibit biological activity. Moreover, many other pollutants such as nutrients and pathogens are often present in water containing excessive amounts of TSS. Therefore, BMP design criteria are typically based on removal of TSS with an assumption that other pollutants of concern will also be treated. However, several conditions may occur that require the treatment of pollutants in addition to TSS:

- 303(d) LISTED STREAMS. IDEM identifies waterbodies that do not meet Federal water quality standards due



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to high concentrations of one or more pollutants. These waters receive a 303-(d) listing. Total Maximum Daily Loads (TMDLs) are developed for each 303-(d) listed waterbody; TMDLs specify the total quantity of a particular pollutant that may be discharged to the listed waterbody on a daily, weekly and monthly basis.

Where site runoff discharges directly to a 303-(d) listed water, stormwater BMPs should treat for all pollutants causing the stream to be listed.

- Stormwater treatment systems in watersheds draining to a stream or river segment impaired for pollutants listed by other sources including, but not limited to, the USEPA, IDEM or Cass County should be designed to treat for that particular pollutant. For example, in a watershed with a stream segment listed as impaired by *E. coli*, at least one of the BMPs should provide an environment in which effective bacterial degradation and adsorption to organic matter can occur.
- Commercial or industrial facilities with a Storm Water Pollution Prevention Plan should design BMPs to ensure treatment of site-specific pollutants of concern. For example, retail gasoline stations should utilize BMPs capable of treating trace concentrations of petroleum products that may be present even where good housekeeping practices are in effect.

Table 1 identifies all Cass County waterbodies that have been 303-(d) listed by IDEM, the pollutant(s) for which the water is listed, and the Hydrologic Unit Codes (HUD) in which the impairment was observed. Cass County and its waterbodies are located in the Upper Wabash River basin.

Table 1. 303-(d) listed waterbodies in Cass County, Indiana, 2008.

Table 1. 303-(d) listed waterbodies in Cass County, Indiana, 2008.

14-DIGIT HUC	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT	IRCAT*
5120105050030	Deer Creek (Between Munson Ditch And Brown Ditch)	<i>E. Coli</i>	5A
5120105050030	Deer Creek (Upstream Of Munson Ditch)	<i>E. Coli</i>	5A
5120104070050	Eel River	<i>E. Coli</i>	5A
5120104070060	Eel River	<i>E. Coli</i>	5A
5120104070010	Eel River	Mercury in Fish Tissue	5B
5120104070050	Eel River	Mercury in Fish Tissue	5B
5120104070060	Eel River	Mercury in Fish Tissue	5B
5120104070060	Eel River	Mercury in Fish Tissue	5B
5120104070070	Eel River	Mercury in Fish Tissue	5B
5120104070010	Eel River	PCBs in Fish Tissue	5B
5120104070050	Eel River	PCBs in Fish Tissue	5B
5120104070060	Eel River	PCBs in Fish Tissue	5B
5120104070060	Eel River	PCBs in Fish Tissue	5B
5120104070070	Eel River	PCBs in Fish Tissue	5B
5120104070070	Eel River - Loagansport Water Intake	Mercury in Fish Tissue	5B
5120104070070	Eel River - Loagansport Water Intake	PCBs in Fish Tissue	5B
5120105010040	Galbreath Ditch	Impaired Biotic Communities	5A
5120105010010	Grants Run	<i>E. Coli</i>	5A
5120104070050	Mud Branch	<i>E. Coli</i>	5A
5120101170110	Pipe Creek	<i>E. Coli</i>	5A
5120101170110	Pipe Creek	PCBs in Fish Tissue	5B
5120101170130	Pipe Creek	PCBs in Fish Tissue	5B
5120101160040	Wabash River	PCBs in Fish Tissue	5B
5120101180020	Wabash River	PCBs in Fish Tissue	5B
5120101180040	Wabash River	PCBs in Fish Tissue	5B
5120105010010	Wabash River	PCBs in Fish Tissue	5B

*IRCAT = impairment category. 5A refers to threatened or impaired reaches that require 1 or more TMDL; 5B refers to reaches that are impaired for mercury or PCBs (IDEM, 2008).

Pathogens (represented by the presence of *E. coli*) can be removed biologically via microbial degradation. Table 2 provides a summary of available research on the removal of pathogens in a variety of stormwater BMPs.

Polychlorinated bi-phenyls (PCBs) on the other hand are highly persistent environmental toxins, remaining adsorbed to sediments and organic material, or migrating with ground or surface water when sorbed to colloids (EPA, 1990).

Best management practices that retain sediments in infiltration basins may be best for removal of PCBs, as invertebrates in wetlands and stormwater ponds may ingest contaminated sediments, and introduce the toxin into the food chain. In addition, testing and removal of collected sediments from dry basins may be simpler and less destructive than sediment removal from wetlands and ponds.



The forms in which mercury is generally found in water are methyl mercury or mercury II, both of which are often associated with organic matter (EPA, 1997). Mercury can be adsorbed to sediments, chemically altered or taken up by rooted macrophytes; in the water column, mercury can be taken up by floating vegetation (Molisani et al., 2006).

Wetlands without sulfur-containing substrates or sulfites in the water column are more suitable for mercury removal than those with sulfur, which contributes to the methylation and bioavailability of mercury (King et al., 2002).

Wetlands have been found to remove more than 80% of mercury from stormwater, with removal efficiency increasing with wetland age (Nelson et al., 2006).

Table 2. Reported effectiveness of various stormwater BMPs for removing pathogens from runoff.

Table 2. Reported effectiveness of various stormwater BMPs for removing pathogens from runoff.

BMP	PATHOGEN	% REMOVAL	DEPTH	HRT*	REFERENCE
Stormwater Wetlands (Surface flow)	<i>Giardia</i>	73%	NR**	4 d	Gerba et al., 1999
	<i>Cryptosporidium</i>	58%	NR	4 d	Gerba et al., 1999
	thermotolerant coliforms	79%	5 – 15 in	NR	Davies and Bavor, 2000
	Enterococci	85%	5 – 15 in	NR	Davies and Bavor, 2000
	heterotrophic bacteria	87%	5 – 15 in	NR	Davies and Bavor, 2000
Stormwater Wetlands (Subsurface flow)	<i>Salmonella</i>	99%	—	NR	Pundsack et al., 2001
	Coliphage	95%	—	4 d	Gerba et al., 1999
	total coliforms	99%	—	4 d	Gerba et al., 1999
	fecal coliforms	98%	—	4 d	Gerba et al., 1999
	thermotolerant coliforms	33%	8', 3 cells	NR	Davies and Bavor, 2000
Stormwater ponds	Enterococci	23%	8', 3 cells	NR	Davies and Bavor, 2000
	heterotrophic bacteria	22%	8', 3 cells	NR	Davies and Bavor, 2000
	total coliforms	64%	3.3 ft	5-d	Kurz, 1999
	fecal coliforms	98%	3.3 ft	5-d	Kurz, 1999
	fecal coliforms	89%	9 ft	5-d	Kurz, 1999
	total coliforms	4%	3.3 ft	14-d	Kurz, 1999
	fecal coliforms	76%	3.3 ft	14-d	Kurz, 1999
	total coliforms	38%	9 ft	14-d	Kurz, 1999
	fecal coliforms	69%	3.3 ft	14-d	Kurz, 1999
	total coliforms	59%	—	NR	Kurz, 1999
Sand Filters	fecal coliforms	65%	—	NR	Kurz, 1999
	<i>Salmonella</i>	95 – 99%	—	NR	Pundsack et al., 2001
Grass Swales	<i>E. Coli</i>	6 – 12%	—	—	EPA, 2005

* HRT = Hydraulic retention time

** NR = Not reported

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STORMWATER MANAGEMENT, CASS COUNTY, INDIANA: WET DETENTION BMPs

A. SETTLING PONDS

SETTLING PONDS: DESCRIPTION

Settling ponds are landscape features that readily remove coarser sediments (sand and some silt), and which can reduce Biochemical Oxygen Demand (BOD), nutrients, and trace metals in stormwater runoff. These water quality benefits are achieved by creating sufficient residence time to settle out particulates, and by microbial processes that occur over time in sediments and in the water column (Minton, 2005).

Settling ponds are capable of providing highly effective Total Suspended Solids (TSS) removal from stormwater originating in watersheds underlain by soils from HSG-A and HSG-B. The finer soil particles associated with HSG-C and HSG-D are not readily removed in settling ponds due to the slow settling velocities of fine particles. However, settling ponds can be used in combination with wetland or infiltration BMPs to effectively remove finer soil particles.

SETTLING PONDS: ADVANTAGES

- Settling ponds can provide long-term removal and storage of TSS and other pollutants, through physical and biological processes.
- Aquatic and terrestrial habitat can be provided by settling ponds, especially when vegetated areas are included in the design.
- Settling ponds can offer flood control benefits in addition to water quality benefits.
- Settling ponds can be used to handle large drainage areas.
- Carefully designed ponds can enhance natural aesthetic views.

SETTLING PONDS: LIMITATIONS

- In order to avoid stagnation and potential odor, an adequate supply of runoff or recharge source must be available to ensure a minimum average pool depth of six feet throughout the entire year.
- Settling ponds can attract undesired waterfowl populations, leading to increased potential for fecal coliform export
- Heavy storms may cause mixing and subsequent resuspension of solids.
- Seasonal algal blooms can result in export of organic TSS.



Ponds require some amount of maintenance, for example periodic removal of garbage and invasive species.

- Safety concerns related to open water situations must be addressed.

SETTLING PONDS: GENERAL DESIGN PRINCIPLES

Residence Time.

Residence time should be sufficient to allow 80% of the influent TSS to settle a minimum of three feet (Minton, 2005), to help ensure sediments will reach the bottom and remain in the pond. Settling rates can be based on published details according to soil type on the site, or on site-specific geotechnical data.

Sediment Storage

In addition to providing adequate residence time for TSS settling, the volume of the permanent pool should be designed to accommodate the expected accumulation of sediment for the soil type in the pond drainage area over an extended time period. Designing for sediment storage will minimize the need for long-term maintenance.

Depth

Settling ponds should be deep enough to prevent thermal pollution and allow for long-term sediment accumulation. Shallower areas should also be provided along the banks to support wetland plants, which will enhance aesthetic appeal and improve habitat value and stormwater treatment in the BMP.

Pond Shape

Settling ponds shall be shaped to ensure well mixed conditions during water quality events. Inlets and outlets can be placed at opposite ends of a pond, or in other arrangements that allow for adequate residence time prior to reaching the outlet. Berms or other diversionary structures can be used to help increase time of travel and prevent short circuiting when inlets and outlets must be placed near each other. Irregular, curvilinear pond edges and wetland fringes are encouraged to help reduce bank scouring from wave action.

Vegetation

Unless prohibited by county surveyor or other utility easement, trees should be planted, at a

minimum, on the south or southeast bank of the pond to promote shading. Shading helps to limit the growth of algae, which can act as a source of exported TSS. Shading also helps to lower water temperature, reducing thermal impacts to receiving waters. Planting of trees around the entire pond is encouraged (with exception of areas provided for maintenance access), as encircling the pond with trees will ultimately be more effective at providing shade.

Plugs of appropriate native wetland plant species can be planted in areas where the water depth is 18 inches or less below normal pool. Where additional wetland fringe is desired above normal pool but below the water quality stage, a wet to mesic native species mix can be seeded and stabilized with appropriate erosion control methods.

Geese create turbidity leading to exports of TSS, and also contribute substantial quantities of nutrients and organic matter to the system through their feces. In watersheds containing receiving waters that are impaired for *E. coli*, settling ponds should include a wetland fringe below the water quality stage elevation to help prevent the use of the settling pond by geese.

B. STORMWATER WETLANDS

STORMWATER WETLANDS: DESCRIPTION

A variety of mechanisms are responsible for improving the water quality of stormwater runoff in constructed stormwater wetlands. Wetlands provide physical attenuation of flow velocity and reduce stormwater volumes by evapotranspiration. Plant leaves and stems trap fine sediments and provide surfaces for establishment of biofilms on which chemical treatment and physical flocculation can occur (Minton, 2005). Plants, and the microbes attached to them, take up nutrients in stormwater runoff. Treatment effectiveness for sediment and nitrogen removal can increase as a constructed wetland matures, and plant growth becomes robust (Jordan et al. 2003); on the other hand, a wetland's capacity for phosphorus removal can decrease with time (Kadlec and Knight, 1996). Precipitation of metals and phosphorus occurs in wetlands according to the combined influences of oxidation/reduction, pH, and the presence of metal cations (Vymazal et al. 1998).

Stormwater, considered "the most common cause of water pollution" by the U.S. Environmental Protection Agency (EPA), may not be discharged untreated to natural wetlands. The Indiana Department of Environmental Management (IDEM) prohibits the use of existing wetlands for water pollution control.

It is not desirable to dredge wetlands to remove sediments, as doing so will disrupt the equilibrium and habitat that establish over time in the system. Therefore, it is recommended that stormwater wetlands be sized to accommodate long-term sediment storage with no compromise in function.

STORMWATER WETLANDS: ADVANTAGES



- Properly constructed stormwater wetlands provide effective soluble and particulate pollutant removal, quality wildlife habitat and aesthetic landscape features.
- Constructed wetlands can provide effective removal of colloidal particles, such as clay and fine silt, and are an effective component of treatment trains in watersheds with C and D soils.
- Provided that hydraulic loading rate does not exceed two (2) feet per day (remaining below the height of dominant vegetation), and that the majority of water flow is routed through vegetation, stormwater wetlands can be expected to remove up to 95% of TSS, regardless of TSS loading (Reed et al. 1995).
- Substantial aquatic and terrestrial habitat can be provided by stormwater wetlands.
- Carefully designed wetlands can enhance natural aesthetic views.

STORMWATER WETLANDS: LIMITATIONS

- A small background concentration of organic TSS will almost always be present in wetlands, due to primary productivity in the system (Reed et al. 1995; Kadlec and Knight 1996).
- Wetlands require some amount of maintenance, for example periodic removal of garbage and invasive species.

STORMWATER WETLANDS: GENERAL DESIGN PRINCIPLES

The stormwater wetland may be designed as either a stand-alone BMP, or as part of a multi-component treatment train that includes additional stormwater treatment features, such as settling ponds, rain gardens or infiltration basins.

Principle design elements and considerations are listed below.

Volume

The volume of normal pool in the wetland should be equal to or greater than the runoff volume from the site's water quality storm event.

Sediment Storage

If the stormwater wetland receives water that has been pre-treated in a settling pond or other properly sized BMP, or if the watershed contains predominately C or D soils, an inlet pool is not necessary because coarser particles should have settled out before arriving in the wetland. If not preceded

by a BMP capable of removing sand and larger particles, the stormwater wetland should contain a deeper pool or forebay at each inlet. The volume of the deeper pools should be designed to accommodate the expected accumulation of sediment for the soil type in the wetland drainage area over an extended time period. Designing for sediment storage will minimize the need for long-term maintenance.

Depth

The average depth in vegetated portions of stormwater wetlands should not exceed the depth required by a variety of native emergent plant species. Open water or non-vegetated areas may be designed into the stormwater wetland to increase topographical variation and sediment storage capacity. Wet detention BMPs with greater than 30% open water are generally considered settling ponds.

Shape

The shape of a stormwater wetland should be designed to maximize the flow path of water through the system. Curved borders are preferable to linear sides and corners, in reducing scouring and increasing aesthetic appeal. The wetland can be constructed as a series of cells to promote distribution of flow through the system, and finger berms or other natural flow-diverting features can be incorporated.

Vegetation

Unless prohibited by county surveyor or other utility easement, trees may be planted around the stormwater wetland to encourage shading. Shading helps to limit the growth of algae, which can act as a source of exported TSS. Trees shall not be planted in areas that will provide access points for maintenance. Native tree species that are tolerant of occasional inundation should be selected.

Live herbaceous plants (plugs) should be selected according to soil moisture requirements. Plants should be native, non-invasive species acquired from a local or regional nursery, and should be of local (regional) genotype to maximize their appropriateness to and survivability in the climate of Cass County, Indiana.

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STORMWATER MANAGEMENT, CASS COUNTY, INDIANA: INFILTRATION BMPs

INFILTRATION: DESCRIPTION

Infiltration-based Best Management Practices (BMPs) function by requiring the stormwater quality volume to filter through a design medium for treatment prior to discharge. Infiltration can be achieved in well-drained soils where seasonal high groundwater does not prevent adequate drainage, or infiltration can be simulated in poorly drained soils through use of underdrains. Common names for infiltration BMPs include, but are not limited to: dry detention basins, bioretention areas, and rain gardens.

A variety of substrates can be added to the soil infiltration zone to create an environment conducive to adsorption of pollutants. Organic substrates also provide sites for microbial attachment, which can facilitate degradation of these pollutants (e.g. oil, grease, antifreeze, herbicides). Properly designed infiltration BMPs can also remove fecal coliform bacteria, and should be considered for watersheds that discharge to streams listed for *E. coli*.

INFILTRATION: ADVANTAGES

- Properly constructed infiltration-based BMPs can remove over 95% of influent Total Suspended Solids (TSS) (Minton, 2005).
- Infiltration-based BMPs that incorporate an organic layer such as compost can remove in excess of 90% of dissolved metals through cation exchange (USEPA, 2004).
- Most fecal coliform will be removed within the first two (2) feet of filtering when organic matter is used as the filter medium (Bouwer et al., 1974).
- The BMP can vary in size and shape and use can be customized to meet specific site constraints.
- Infiltration can reduce the need for storm sewer piping and curb and gutter in roads and parking areas.

INFILTRATION: LIMITATIONS

- Underdrains may be required to achieve adequate drainage.
- Optimum performance of the infiltration BMP may be affected by water table or soil conditions

INFILTRATION: GENERAL DESIGN CRITERIA

Infiltration systems may be designed as either stand-alone BMPs, or as part of multi-component treatment trains that include additional stormwater treatment features, such as settling ponds or wetlands.



Principal design elements and considerations are listed below.

Filter Media

Infiltration basins located in hydrologic soil group (HSG) – A soils and undisturbed HSG – B soils do not require underdrains or special backfill requirements. Infiltration basins in HSG – C and D soils, or disturbed HSG – B soils, require an underdrain below the fill media. An example of an effective infiltration media placed above the underdrain would be a mixture containing 30% sand, 30% organic mushroom and/or leaf compost mulch, and 30% topsoil by volume.

Underdrains

Where required, underdrains should consist of dual-walled, perforated HDPE pipe or geocomposite drainage net. A minimum underdrain pipe diameter of 4 inches is recommended.

Sediment Accumulation

The volume provided for water quality treatment should allow for long term sediment accumulation.

Vegetation.

The presence of root channels within the filter medium will discourage clogging. The deep root systems of native prairie species and other native perennials encourage infiltration of stormwater and enable the plants to survive in dry years without regular irrigation. Plant species should be selected based upon expected hydrologic conditions, in order to promote long term functionality of the infiltration BMP. Trees and shrubs should be planted at a minimum distance from the underdrain equal to half of the species' expected mature height, to help protect the underdrain integrity.

DESCRIPTION OF COMMON INFILTRATION BMPs

Table 1 describes a variety of infiltration BMPs that may be used for stormwater management.

Table 1. Description of Typical Infiltration BMPs.

Table 1. Description of Typical Infiltration BMPs.

INFILTRATION BMP	DESCRIPTION
RAIN GARDENS & BIORETENTION AREAS	Rain gardens and bioretention areas are landscaping features whose purpose is to provide on-site infiltration and treatment of stormwater runoff using soils and vegetation. They are commonly located within small pockets of residential land where surface runoff is directed into shallow, landscaped depressions; or in landscaped areas around buildings; or, in more urbanized settings, to parking lot islands and green street applications.
VEGETATED SWALES	Swales (e.g., grassed channels, dry swales, wet swales, or bioswales) are vegetated, open-channel BMPs that are designed to attenuate, convey and treat stormwater runoff. As stormwater runoff flows along these channels, vegetation slows the water to allow sedimentation, filtering through a subsoil matrix, or infiltration into the underlying soils.
VEGETATED BUFFERS	Vegetated buffers are areas of natural or established vegetation that protect the water quality of neighboring areas. Buffer zones slow stormwater runoff, facilitate infiltration, contribute to ground water recharge, and filter sediment. Slowing runoff also helps to prevent soil and stream bank erosion.
TREE BOXES & PLANTER BOXES	Tree boxes and planter boxes are generally located in right-of-ways along city streets. These areas provide permeable surfaces where stormwater can infiltrate. The sizes of tree and planter boxes can vary considerably.

Infiltration BMP	Description
PERMEABLE PAVEMENT	Permeable pavement is a porous or pervious pavement surface, often built with an underlying stone reservoir that temporarily stores surface runoff before it infiltrates into the subsoil. Permeable pavement is an environmentally preferable alternative to traditional pavement, because it allows stormwater to infiltrate into the subsoil. Various types of permeable surfaces are available, including permeable asphalt, permeable concrete and even grass or permeable pavers.
DOWNSPOUT DISCONNECTION	A practice where downspouts are redirected from sewer inlets to permeable surfaces where runoff can infiltrate.
INFILTRATION TRENCHES	An infiltration trench is a trench filled with rock or other media, which is designed to receive and infiltrate stormwater runoff. Runoff may or may not pass through one or more pretreatment measures, such as a swale, prior to entering the trench. Within the trench, runoff is stored in void spaces within the media, and gradually infiltrates into the soil matrix. A number of different design variations exist. The trench must be wider than it is deep to avoid classification as a Class V injection well under USEPA guidelines.



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STORMWATER MANAGEMENT, CASS COUNTY, INDIANA: LOW IMPACT DEVELOPMENT BMPs

LOW IMPACT DEVELOPMENT: DESCRIPTION

In general, Low Impact Development (LID) refers to a method of site development in which earthwork is minimized, existing runoff conditions are conserved or improved where practicable, stormwater is managed in a distributed manner and as close to its source as possible, and discharges from impervious surfaces are disconnected from the collection system to the extent practicable. In practice, LID helps to reduce the need for end-of-pipe solutions to stormwater, while providing aesthetically-pleasing, lower maintenance water quality management systems. LID practices effectively reduce the post-construction runoff volumes and the resulting runoff curve number for a site, by increasing pervious surface area and by storing stormwater in landscape features throughout the site.

General principles of low impact development Best Management Practices (BMPs) that should be followed to help ensure proper functioning over the long term include:

- LID features should be covered by an easement or other agreement that assigns responsibility for their maintenance.
- A geotechnical Investigation should be performed prior to design to fully understand the subsurface site conditions
- LID features should be constructed on A or well-drained B soils, or on amended soils with underdrains if located in areas with poorly-drained B soils or any type of C or D soils.
- Bottom elevations of underdrains (if present) should be above the seasonal high water table.
- Final construction of LID features should be completed after the contributing drainage area has been stabilized.

LOW IMPACT DEVELOPMENT: METHODS

Several methods for incorporating LID are described in this fact sheet. In addition to methods described herein, several readily available references provide details on incorporating LID practices into site development, including but not limited to those produced by Prince George's County, MD (1999), Delaware DNR and Brandywine Conservancy (1997), and the USEPA (2000). Reduced post-development runoff curve numbers (CN) result in a reduction in the storage volume necessary to achieve required water quality parameters. A reduced CN can be achieved in several ways during site design:

1. *Decreasing the amount of impervious surface;*
2. *Use of non-turf, alternate vegetation cover types in greenspaces;*



3. Use of pervious pavement in place of conventional pavement;
4. Siting impervious surfaces on clay-based soils rather than on soils with good existing infiltration rates, and preserving existing forests, meadows, and other well-vegetated areas;
5. Use of distributed storage;
6. Use of vegetated, flow-through BMPs.

Decreasing Impervious Surface

Most LID practices involve preservation of, or constructed increases in, pervious surface area, thereby reducing the adverse impacts of impervious surface area and often enhancing or improving on existing pervious areas.

Alternate Cover Types in Greenspaces

The total volume and rate of storm water runoff from a site can be reduced by maintaining or restoring woods, meadow or other vegetation cover types in place of traditional turf.

Pervious Pavements

Pervious pavement sections provide filtering of storm water within the structural pavement cross section. Use of pervious pavement can thus enable a significant decrease in CN over the use of impervious pavement. For the purposes of water quality CN calculations, areas utilizing pervious pavement with an 8 inch washed aggregate base may be conservatively estimated as turf, poor condition, for the underlying hydrologic soil group (HSG). This calculation will provide a conservative estimate of runoff, based on information published in Hydrologic Design of Pervious Concrete (PCA, 2007). Use of a thicker aggregate base under pervious pavement may justify a more aggressive reduction in site curve number.

Preferential Siting Based on Soil Type and Existing Land Use

A core LID principle is to locate proposed impervious surfaces on clay-based soils rather than on soils with good existing infiltration rates. In addition, preservation of existing forests, meadows, and other well vegetated areas is central to LID practices. CN reductions are inherent to these principles of low impact site design.

Distributed Storage

Distributed storage can include multiple, small infiltration BMPs such as rain gardens, or vegetated channels with check dams designed to help store runoff during conveyance. Individual distributed storage areas are typically too small to have a noticeable hydrologic effect, but taken collectively can have a significant effect on water quality and detention requirements. In addition, the size and quantity of storm sewer pipe can be minimized.

LID Storage BMPs such as rain gardens or vegetated channels with check dams follow the same design criteria as those outlined on the fact sheet for Infiltration BMPs. The difference is primarily in scale, in that LID Storage areas are evaluated collectively, while infiltration BMPs are large enough to be evaluated as stand-alone systems.

Vegetated, Flow-Through BMPs

Flow-through vegetated channels and filter strips are stormwater conveyance systems that can reduce stormwater velocities, disconnect impervious areas from direct discharge to pipe collection systems, promote some amount of infiltration, and trap sediments. Where vegetated channels are used to improve stormwater quality and reduce runoff volume, a water quality volume reduction may be calculated according to the volume of water expected to infiltrate in the channel. HSG – C soils may be amended in the upper foot to achieve an infiltration rate comparable to that of HSG – B soils.

The following design criteria should be met in order to reduce runoff and take credit for a runoff reduction in a

vegetated channel:

- A. The effective longitudinal slope of the vegetated channel must not exceed 1%
- B. The vegetated channel should be designed so that runoff from the 10-year storm is non-erosive (horizontal velocity <2 ft/sec)
- C. If the vegetated channel is constructed in D soils, the upper 12 inches of soil must be amended to achieve an infiltration rate at least comparable to C soils.
- D. Effective slope can be reduced by including check dams. Check dams should be designed with small diameter drains at their base to allow draining between storm events.

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STORMWATER MANAGEMENT, CASS COUNTY, INDIANA: GREEN ROOFS

GREEN ROOFS: DESCRIPTION

Green roofs are vegetated rooftops that consist of a porous medium planted with various drought-tolerant species, often from the Sedum genus (Moran et al., 2005). Green roofs can be highly effective at reducing stormwater runoff and may be of particular interest for use in redevelopment areas where open land is less available for construction of Best Management Practices (BMPs). In addition to runoff reduction, green roofs can provide numerous benefits including improved air quality, reduced utility costs, extended lifetime of the roof and roof membrane, air and water pollution reduction, decrease in the urban heat island effect, increased habitat, and aesthetic appeal (VanWoert et al., 2005). A practical approach to implementing a green roof is to install it when an existing roof is in need of replacement or repair.

GREEN ROOF CATEGORIES

Green roofs are divided into three categories: extensive, semi-intensive, and intensive. Extensive green roofs are shallow, broad, and usually planted with low-growing herbaceous species. They possess an average media depth of approximately four (4) inches and are generally used for stormwater management due to the ability of the growth medium to hold water (Deutsch et al., 2007). If properly designed, extensive green roofs can intercept the rainfall depth associated with the 95% storm return depth, and reduce the runoff rate of stormwater from all storms. Intensive green roofs are deeper (minimum of one foot), maintenance-intensive, and are designed more as landscape features covering a smaller amount of roof surface area, than as stormwater management features (Scholz-Barth, 2001). Semi-intensive roofs are transitional between extensive and intensive green roofs (see chart below). This supplemental BMP will focus on extensive green roofs.

COMPONENTS OF A GREEN ROOF

Green roofs are composed of multiple layers (Table 1) that work in conjunction to provide stormwater management and a variety of other benefits. All green roof materials used on a site must be physically and chemically compatible with the existing roof and with one another, to ensure components do not interact negatively. Manufacturers can provide compatibility information (GRHC, 2005). All roof elements should be inspected for proper operation, integrity of waterproofing, and structural stability throughout the lifetime of the green roof (PWD, V.2.0).

Generally, a green roof consists of the following components, layered from the roof upwards (Figure 1):

- Roof
- High quality waterproofing membrane



- Insulation (optional)
- Drainage layer, which may function as a temporary water storage area.
- Filter fabric (non woven) that allows water through but inhibits root penetration and passage of finetextured particles.
- Growth medium: usually an engineered material consisting primarily of mineral components and a small percentage of aged, peat-free organic matter.
- Appropriate plant species
- A low-maintenance zone of gravel or other material around utilities and roof edges for safety and accessibility.

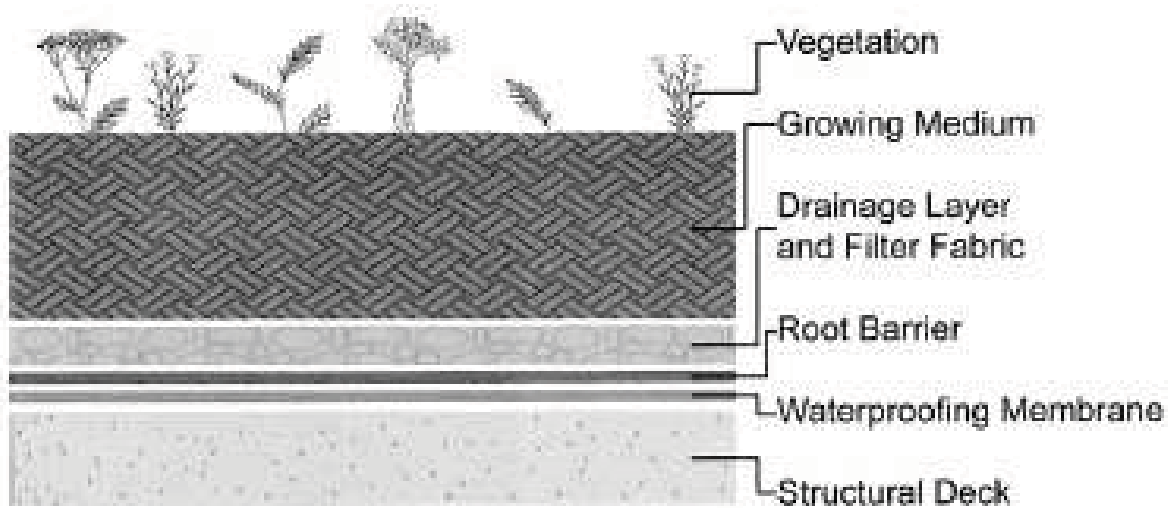
Table 1. Components considered a) necessary, and b) optional in green roof design.

Table 1. Components considered a) necessary, and b) optional in green roof design.

NECESSARY	OPTIONAL
Waterproofing Membrane	Membrane Protection Layer
Drainage Layer	Insulation
Root Barrier	Water Retention Layer
Filter Cloth	Erosion Protection Layer
Growing Medium	Irrigation System
Vegetation	Water Features
	Walkways
	Curbs and Borders
	Railings
	Lighting

Source: Green Roofs for Healthy Cities, 2005.

Figure 1. Cross Section of a typical Green Roof



Source: *Green Roofs for Healthy Cities*, 2005.

Roof Structure

The load capacity of a roof structure must be taken into account when considering installation of a green roof. Extensive green roofs typically can weigh up to between 15 and 30 pounds per square foot (in addition to snow loads) and are compatible with wood or steel decks, while intensive green roofs can weigh more than 80 pounds per square foot and typically require concrete supporting decks. The ability of an existing building to support a green roof under saturated conditions should be investigated by a Structural Engineer. For proposed buildings, the green roof design should be coordinated with the Structural Engineer or Architect (PBES, 2008).

Waterproof Membrane

Waterproof membranes are placed on the roof surface to maintain the structural integrity of the roof, preventing leaks. Membranes can be laid down in sheets that are seamed together, or in a single liquid layer (Hahn Oberlander et al., 2002). The green roof itself will protect the membrane and the roofing material from sun damage. Some waterproofing materials are inherently resistant to root penetration, whereas others require an additional root barrier. Regardless, the membrane should be made of a material that will not interact negatively with the other chemical components of the green roof system (Peck et al., 2002).



Drainage Layer

A balance must be struck between water storage and drainage. A variety of materials are available for the drainage/storage layer, and selection of a material will depend upon the needs of the site (RCT, 2006). This layer may also provide a barrier to root penetration, protection of the membrane, enhancement of the compressive strength and thermal resistance of the insulation, and stormwater storage.

Root Barrier

Shallow-rooted, drought tolerant plant species are the best choice for green roofs. A root barrier is a chemical or physical barrier that prevents plants from compromising the waterproofing. Not all waterproofing membranes have the ability to block the roots of the plants chosen for the system, or of other plant species that may establish themselves. When choosing a root barrier, these factors must be taken into consideration.

Filter Fabric

The filter fabric is a durable, non-woven material that holds the growing medium in place and prevents fine particles from passing into and clogging the drainage layer of the green roof system (Peck et al., 2002).

Filter fabric is situated on top of or incorporated into the drainage layer. Multiple layers may be used if determined to be necessary during design.

Growing Medium

The growing medium is a critical element of stormwater storage and detention on a green roof, and provides a buffer between the roof structure and vegetation for root development. Storage in a green roof occurs primarily in the pores of the growing medium, which consists of a relatively lightweight blend of mineral materials combined with a small percentage of organic matter (Alexander, 2004). When organic materials are used, peat should be avoided because of its nonrenewable nature and its potential to catch fire.

Composts should be aged, rather than containing substantial quantities of available nutrients that can result in an export of pollutants from the green roof (Wachtel, 2007). Site soils must never be used unless sampled and specified as an addition to the planting medium component by an experienced green roof consultant (GRHC, 2005).

Vegetation

The plant material chosen for green roofs typically is designed to take up much of the water that falls on the roof during a storm event. Plant material can also provide fire retardation, insulation and shading; it collects airborne particulates and other pollutants, and releases moisture to provide evaporative cooling. The

primary goals in selecting plant species are survivability, ecological appropriateness and stormwater management; choosing species for habitat value, aesthetic appeal or other objectives may also be considered. Plant species selection is critical to the sustainability of the roof. A high percentage of the vegetation on an extensive roof should be from the *Sedum* genus, a group of succulent plants that withstands a variety of moisture conditions (Monterusso et al., 2005).

Maintenance

It is important that a green roof be inspected on a regular basis to ensure its functionality is maintained. Irrigation is often necessary during plant establishment and periods of drought. Annual testing of the growing medium can determine whether plant nutrients are adequate, or if additional fertilization is required.

Green roofs should be inspected for the presence of undesirable plants, which should be removed. It is recommended that records be kept of all roof maintenance activities for future reference and inspections.

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RURAL SANITARY WASTEWATER STRATEGIES, CASS COUNTY, INDIANA

SUSTAINABLE WASTEWATER STRATEGIES: OVERVIEW

On site wastewater treatment is increasingly recognized as an ecological, economic and aesthetic means of longterm, decentralized waste management (EPA, 2002). Ecological Treatment Systems (ETS), including constructed wetlands and subsurface flow media filters, may be a desirable choice for sites where sewer infrastructure is lacking or inadequate, and where an alternative to traditional septic systems is sought or required. General principles of onsite, ecological wastewater treatment include:

- Utilization of natural physical, biological and chemical processes to remove pollutants from wastewater
- Emphasis on minimizing required energy and mechanical inputs
- Periodic but minimal operation and maintenance requirements
- Secondary benefits including aesthetic appeal, habitat creation and long-term cost savings
- Potential risks (pollution of ground or surface water if not properly designed) are similar to those of conventional systems

Components of an ETS generally include a settling tank for primary treatment where solids are removed and digested, a wetland or other fixed media filter for secondary treatment of nutrients, organic matter, pathogens and other pollutants, and a sub-surface drainfield or other measure for discharge and polishing of effluent. The following processes comprise the general steps involved in ecological wastewater treatment:

- Solids removal
 - Gravity settling in a tank or other chamber in which partial biological digestion of solids occurs
- Reduction of nutrients, pathogens, Biochemical Oxygen Demand (BOD), suspended solids and other pollutants through biochemical and physical processes
 - Major nutrients include nitrogen and phosphorus
 - Pathogens include bacteria, viruses and protozoa
 - Biochemical oxygen demand indicates the amount of oxygen required to decompose organic material contained in the waste

Where soils and depth to groundwater are suitable, effluent may be discharged directly to the subsurface through a leachfield, sand mound, or other dispersal system. Where surface waters are nearby, the ETS can be designed to meet anticipated discharge limits without the need for a



subsurface disposal field, for example by use of an ultraviolet disinfection system.

Primary advantages of subsurface discharge include additional wastewater polishing and few to no monitoring requirements. Primary disadvantages include land area requirements and cost of construction. The primary advantage of surface water discharge is the lower construction cost – subsurface disposal systems can comprise more than half the cost of an ETS. The primary disadvantage to surface discharge is increased monitoring cost.

Permitting of non-discharging residential and commercial onsite wastewater treatment (OSWWT) systems takes place primarily through the Indiana State Department of Health (ISDH).

Construction permits are likely to be required for new OSWWT systems, although commercial systems servicing less than 2,000 gallons per day and discharging to a conventional subsurface absorption field may be exempt from the requirement for a construction permit. Some ecological treatment systems may be considered experimental, also requiring a construction permit from ISDH.

Applications for construction permits must include information on the expected average and maximum daily flows, infrastructure to be installed, inspection, operation and maintenance plans, locations of property lines and roads, and topography. Easements will be required to protect sewer lines and allow for maintenance. The complete requirements for permit applications can be found through the ISDH website: <http://www.in.gov/isdh/>.

The Indiana Department of Environmental Management (IDEM) recommends establishment of wastewater management districts for implementing and managing OSWWT systems. For OSWWT systems with discharge to surface waters, an NPDES permit will be required through IDEM, which establishes effluent pollutant limitations and requirements for operation. IDEM defers to ISDH for review of design and construction plans for OSWWT systems with subsurface discharge. IDEM and ISDH are currently (as of April, 2009) collaborating on the development of standards for public and private OSWWT systems to address systems that are currently failing, as well as systems for new development.

SUSTAINABLE WASTEWATER STRATEGIES: DESIGN PRINCIPLES

The process of designing an onsite wastewater treatment system or ETS requires evaluation of wastewater characteristics, site soils and groundwater elevations, groundwater flow paths and directions, land use and availability, flood hazard zones, existing water supply and sewer infrastructure, anticipated future land use, pumping distance and elevation, expected wastewater volume, required setbacks and buffer zones, operation/maintenance/monitoring requirements, and preliminary cost estimates (Reed et al., 1995; EPA, 2002).

SUBSURFACE DISCHARGE SYSTEMS

The dominant soil map units in Cass County, are described in Table 1 (NRCS, 2008):

Table 1. Dominant soil series in Cass County, IN, by percent of land surface area.

MAP UNIT SYMBOL	MAP UNIT NAME	% OF CASS COUNTY SOIL	DRAINAGE CHARACTERISTICS	SEASONAL HIGH WATER TABLE
CpA	Crosier loam	8%	Somewhat poorly drained	1 - 3 feet
Cy	Cyclone silt loam	13%	Poorly drained	At or above surface for significant portion of year
FcA	Fincastle silt loam	12%	Somewhat poorly drained	1 - 3 feet
Rn	Rensselaer loam	11%	Very poorly drained	At or above surface for significant portion of year

Although the major soil series in Cass County are poorly drained due to a relatively high water table, the predominant land use on these soils is agricultural crop production. Tile drainage is in place over much of the soil area, resulting in a lowering of the seasonally high groundwater table and soil conditions favorable for agricultural use. Because loam and silt loam soil texture classes can infiltrate reasonably well when drained, techniques similar to farm tiling can facilitate infiltration and dispersal of treated wastewater.

Areas within the FEMA 100-year floodplain are not suitable for subsurface discharge. However, the majority of Cass County is located outside the 100-year floodplain and within the Federal Emergency Management Association Flood Zone C, indicating minimal flooding potential.

SURFACE WATER DISCHARGE SYSTEMS

Where subsurface discharge is not technically feasible due to a high groundwater table, soil condition, floodplain or other factor, an ETS may be constructed to obtain and comply with a surface water discharge permit. These systems may cost less to construct than an ETS with subsurface discharge, however monitoring is more intensive for systems with a surface water discharge. Because of monitoring costs, surface discharging systems are typically not costeffective for areas with fewer than 50 residential users, or their commercial equivalent.

SUSTAINABLE WASTEWATER STRATEGIES: FUNDING OPPORTUNITIES

Various funding mechanisms are in place to assist public and private entities in meeting the requirements of the Clean Water Act’s National Pollutant Discharge Elimination System (NPDES) program as well as regional water quality standards. Sources of federal funding include the Construction Grants for Wastewater Treatment Works Program, and the Clean Water State Revolving Fund, both administered by the USEPA.

The construction grants program provides up to 85% of eligible project costs to successful grantees, for construction of innovative or alternative treatment processes. Some types of ETS are



no longer considered experimental (such as constructed wetlands) are not likely eligible for construction grants. However, other types of ETS may be eligible pending application and review by the funding agency.

The state revolving fund provides fixed-rate, 20-year low interest loans to finance projects aimed at protecting or improving water quality (EPA, 1999; NEMW, 2007). Information and application forms can be found at the following website: <http://www.in.gov/ifa/srf/2386.htm>. Additional sources of potential funding for water/wastewater projects include:

- Environmental Infrastructure Working Group (EIWG)
 - The EIWG is made up of representatives of state and federal government agencies and nongovernmental Indiana organizations. The EIWG assists communities with finding funding options for rural wastewater treatment projects through project meetings initiated by the community with a formal request (<http://www.ruralindiana.org/EIWG.php>).
- Rural Utilities Service Water and Waste Disposal Program
 - Administered by US Department of Agriculture, provides loans and grants to rural communities with 10,000 or fewer people
- Public Works and Economic Development Program
 - Administered by US Department of Commerce, provides grants to support construction or rehabilitation of public infrastructure (<http://www.eda.gov/AboutEDA/Programs.xml>)
- Indiana Rural Community Assistance Program
 - Administered by various Federal agencies as well as the Indiana Department of Environmental Management, provides technical assistance to small communities (fewer than 10,000 people) for water and wastewater projects

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RURAL SANITARY WASTEWATER STRATEGIES, CASS COUNTY, INDIANA

CONSTRUCTED WETLAND AND OTHER FIXED MEDIA SYSTEMS: OVERVIEW

Constructed wetland and other fixed media systems for wastewater treatment fall into two general categories: surface flow wetlands (SFW) and subsurface flow media filters (SMF). Both SFW and SMF are used to provide effective secondary treatment of wastewater, following primary treatment (solids setting and digestion) in a septic tank or other vessel. Key parameters to ensuring successful wastewater treatment include providing sufficient treatment surface area, maximizing flow paths of wastewater through the system, providing adequate hydraulic retention time, and providing alternating or adjacent aerobic and anaerobic environments if removal of nitrogen is required.

Surface flow systems rely primarily on vegetation, suspended solids and sediments for surface area on which biochemical transformation of pollutants occurs. Plant roots also help prevent clogging of subsurface media, and vegetation can provide enhanced pollutant removal during the growing season through uptake of nutrients.

Subsurface flow media filters are typically more space-efficient than SFW due to the higher specific surface area available for biochemical reactions and greater flexibility in design depth. The specific surface area in SMF can be provided by plants, gravel, recycled tire chips, or other media.

Where soils and depth to groundwater are suitable, effluent may be discharged directly to the subsurface through a leachfield, sand mound, or other soil dispersal system. Where surface waters are nearby, the treatment system can be designed to meet anticipated discharge limits without the need for a subsurface disposal field. Primary advantages of subsurface discharge include additional treatment and little to no monitoring requirements. Primary disadvantages include land area requirements and cost of construction. Primary advantages of a surface water discharge are lower construction costs – subsurface disposal systems can comprise more than half the cost of an ecological treatment system. The primary disadvantage to surface discharge is increased monitoring cost.

ADDITIONAL POTENTIAL TECHNOLOGIES

In addition to constructed wetlands and other fixed media filters, there are several management technologies available for wastewater at the single-family residential or small commercial scale. These techniques can treat and/or reduce the volume of wastewater requiring treatment. Package treatment options that may be acceptable at the discretion of the ISDH include Biofilter package treatment systems offered by several wastewater supply companies. Most package

systems require a septic tank with an effluent filter and small sand filter or gravel bed.

Biofilter packages generally require a much smaller footprint than a traditional residential system, but are more costly to install. The additional technologies presented in this fact sheet are composting toilets and anaerobic digestion, both of which reflect a closed-loop approach to waste management.

CONSTRUCTED WETLANDS: SURFACE FLOW SYSTEMS

Surface flow constructed wetlands receive wastewater after primary treatment (removal of settleable solids) via gravity or pressure flow, and are sized to create the minimum hydraulic retention time required to treat the pollutant that degrades most slowly. Wastewater flows horizontally through a surface flow wetland, and the topography of the wetland is designed to maximize the flow path between inlet and outlet. The SFW is planted with appropriate species of native wetland vegetation. Transformation of pollutants in the wastewater occurs via a variety of pathways:

- Temporary or long-term sequestration of phosphorus and other pollutants in wetland soils
- Microbially-mediated reactions on the surfaces of suspended particles in the water column, on stems and roots of plants and in sediments
- Aerobic and anaerobic degradation of organic matter
- Oxidation and reduction of organic nitrogen to ammonia, nitrate and nitrogen gases
- Uptake of nutrients by plant roots

Surface flow treatment wetlands can function effectively during winter in temperate climates, due in part to insulation provided by dead plant material, and ice or snow. The dominant soils in Cass County are loams and silt loams – soils that would likely require a liner to prevent exfiltration of wastewater out of the treatment wetland. Because the impermeable liner is one of the most costly elements of treatment wetland construction, the smaller footprint of a subsurface flow system may make that option a more economical choice. This fact sheet will focus on subsurface flow treatment systems, which require less surface area and may be more appropriate to the region.

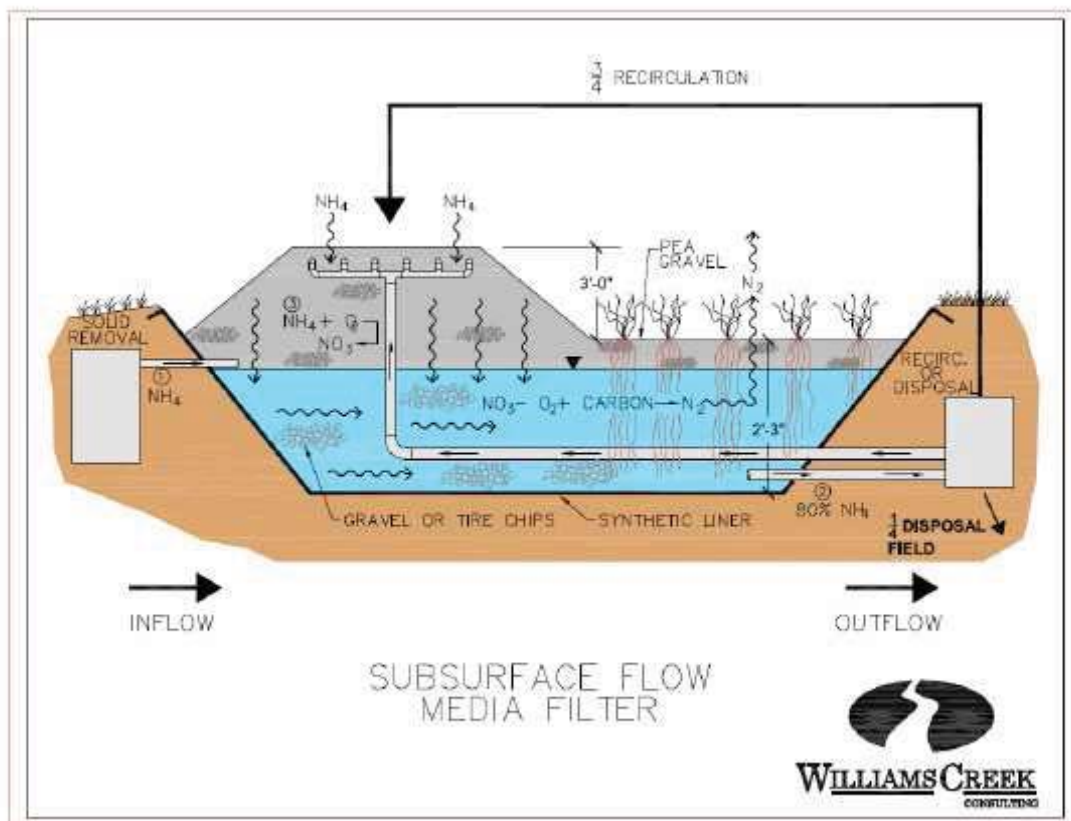
FIXED MEDIA FILTERS: SUBSURFACE FLOW SYSTEMS

Subsurface flow media filters receive wastewater after primary treatment via gravity or pressure flow. Like surface flow systems, SMF are designed to achieve a hydraulic residence time corresponding to the time required to degrade the most persistent pollutant in the waste stream. Transformation of pollutants in the wastewater occurs via the pathways described for surface flow wetland systems, with the following differences:



- SMF systems do not contain a substantial water column, unless storm chambers are included in the design
- Vegetation may or may not be used on the top of a SMF; SMF may be sealed with soil or other cap, or planted with turfgrass, wetland or ornamental native plant species.

A variety of designs are applicable to subsurface flow media filters, depending on the wastewater constituents and the area available for construction of the system. SMF can be constructed as upflow, downflow or horizontal flow filters, or in series using a combination of flow paths. Low horsepower pumps are often used to recirculate wastewater through the SMF system, recycling it to an unsaturated (aerobic) media cap located on top of part of the SMF.



Subsurface flow media filters: treatment processes

By locating wastewater treatment below the soil surface, odors, mosquito breeding and exposure to pathogens are minimized. The media bed provides an extensive surface area on which biochemical reactions take place. Washed river gravel and limestone have traditionally been

used as the media in SMF systems; in the 1990s, experiments with recycled tire chips began to demonstrate the effectiveness of tire chips as a filter media. Tire chips can provide an ecological and economic substitute for part of the gravel in SMF systems. SMFs can be capped with native, locally grown wetland plants that are rooted in pea gravel on the surface of the media bed; the plants take up nutrients and their roots release oxygen and provide attachment sites for microbes. The system can also be made more anaerobic by sealing the surface with soil or other material.

When sanitary wastewater enters the SMF, most of the nitrogen consists of reduced forms including organic compounds or ammonia/ammonium ($\text{NH}_3/\text{NH}_4^+$). In order for nitrogen to be removed from the waste stream, ammonia must be oxidized to nitrate (NO_3^-), and then reduced to inert dinitrogen (N_2). This sequence of reactions requires both aerobic and anaerobic environments, which a recirculating media filter is designed to provide. As wastewater travels through the unsaturated media cap, nitrifying bacteria convert ammonium to nitrate. The wastewater then flows through the saturated portion of the filter, where anaerobic conditions promote transformation of nitrate to N_2 . Recirculation of approximately 80% of the wastewater back through the SMF can produce optimal removal of nitrogen. Some phosphorus is taken up by plants, and additional phosphorus may be adsorbed onto and precipitated with iron from the wire attached to the tire chips.

In addition to nutrients, dissolved and suspended solids are removed in the SMF, by capture on substrate and decomposition by microbes. This is the portion of the waste stream that comprises Biochemical Oxygen Demand (BOD). Because BOD depletes oxygen from water, NPDES regulations specifying maximum discharge values of BOD must be met. BOD removal occurs in anaerobic zones with little sludge production, but also occurs in aerobic zones of the SMF where some sludge production will occur.

Subsurface flow media filters: approximate costs

The minimum cost of a SMF, if pumps and controls are included in the design, is approximately \$40,000. This price includes liners, media, piping, pumps, vegetation and costs for design and construction. SMFs are scalable in design, and can accommodate very large waste flows. While simple, household-scale systems can be constructed without pumps at a cost that would be competitive with a traditional septic system, SMFs become an especially economical option when used at the community or municipal scale. A general pricing rule of thumb for larger systems is approximately \$4 per gallon of waste to be treated. While upfront costs may be comparable to those of more traditional systems, the long term inputs of energy and maintenance are generally far lower for ecological treatment systems, and the lifetime of a SMF is generally longer than that of a conventional system.



ADDITIONAL POTENTIAL TECHNOLOGIES: COMPOSTING TOILETS

Composting toilets: description:

Composting toilets are biological systems in which human waste is contained and degraded without addition of water.

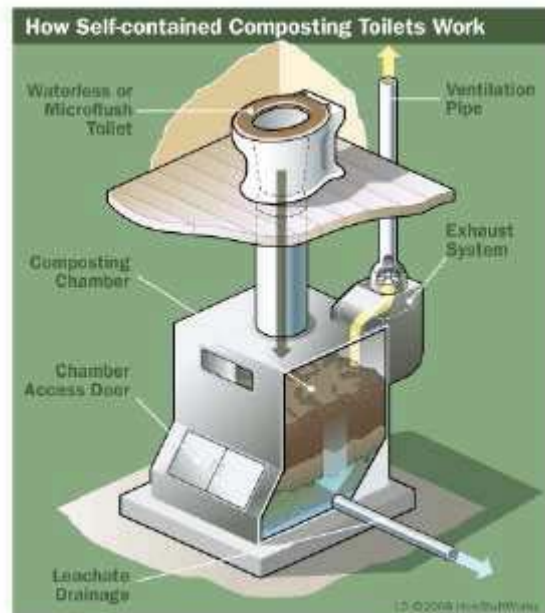
Rather than waste being flushed away to a sewer or external treatment system, wastes are compartmentalized and degraded under aerobic conditions within the composting system. The final volume of waste, after decomposition, is reduced by 70 to 90% of the original volume. 'Finished' (biologically stabilized) waste can be buried, or pasteurized and used as a soil amendment. At this time, use of composting toilets is discouraged by the Indiana State Department of Health, which requires installation of an on-site sewage system on any site utilizing a composting toilet. This current regulatory barrier may loosen over the time period in which the Cass County Comprehensive Plan is implemented; therefore composting toilets are presented as an option that may become more feasible in the future.

Composting toilets: advantages:

- No water is used to flush the system and little power is required to operate a composting toilet.
- Strength and volume of waste is reduced substantially.
- A useful end product is produced.
- Practical for remote sites, areas without a conventional sewer system, or areas with poor soils.

Composting toilets: disadvantages:

- Maintenance is required to keep the system functioning properly.
- Leachate must be managed, for example by evaporation or disposal in a small leachfield or raised bed.
- A power source may be required for exhaust fans.



<http://static.howstuffworks.com/gif/composting-toilet-diagram.gif>

Composting toilets: approximate costs of various systems for a public facility, without installation (costs for residential *systems are less*):

- Phoenix system: \$6,000 - \$8,000
- SunMar system: \$2,500 - \$3,500
- Clivus Multrum: \$5,000
- CTS: \$8,500
- Ecotech Carousel: \$6,000

Composting toilets: references:

- Advanced Composting Systems, LLC, 2007. Using the Phoenix Composting Toilet in Public Facilities: An Information and Application Guide. Available at www.compostingtoilet.com.
- ETI, 1998. Composting Toilet Systems. National Small Flows Clearinghouse Fact sheet.
- Jenkins, 2005. The Humanure Handbook: A Guide to Composting Human Manure. Available at: <http://www.jenkinspublishing.com/humanure.html>.

ADDITIONAL POTENTIAL TECHNOLOGIES: ANAEROBIC DIGESTION

Anaerobic digestion: description:

Anaerobic digestion is a biological process of breaking down organic matter under anaerobic conditions. A byproduct of anaerobic digestion is methane biogas, which is a useful fuel source. During digestion, organic molecules are hydrolyzed into volatile fatty acids, acetic acid and hydrogen. Acetic acid is further broken down to methane, hydrogen and carbon dioxide, and H₂ and CO₂ are also combined to form methane. Biogas generally contains a minimum of 65% methane, and when appropriate infrastructure is installed, this gas can be used on site for applications such as heating, cooling and cooking, or it can be utilized for electricity generation. Many organic materials can be used for biogas production, including animal waste, food scraps, treatment plant sludge, landscaping or yard waste. A consistent and substantial waste stream must be available in order to make anaerobic digestion a viable economic option for waste treatment and energy capture in commercial facilities. Anaerobic digestion can be an excellent option for managing waste from large scale farms or CAFOs, and can provide much or all of the power needed for the facility's day to day operations. <http://static.howstuffworks.com/gif/composting-toilet-diagram.gif>

Anaerobic digestion: advantages:

- The volume of solid waste is substantially reduced, and remaining sludge is highly stabilized and can be used as compost.



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- Available energy, in the form of methane gas, is produced as a byproduct.
- The need for landfill or conventional waste treatment is reduced.
- Digestion is a closed-loop process, using waste as a resource.

Anaerobic digestion: limitations:

- Nutrients are not reduced, so that liquid effluent requires further treatment. However, this effluent can serve as a high-quality fertilizer.
- Infrastructure is required, and profitability may vary with the price of energy.

Anaerobic digestion: cost considerations:

- Construction and operating costs for anaerobic digesters vary according to the scale and design of the project, and the amount of revenue generated by energy production.
- A 2004 study of five digester systems treating dairy cow waste in New York State reported the following capital costs (Wright et al., 2004):



www.powerbase.com/biopower/images/Klaesi_anae

- \$137,000 for a farm with 100 cows
- \$303,000 for a farm with 500 cows
- \$688,000 for a farm with 1,100 cows

Anaerobic digestion: references:

Beck, R. W., 2004. Anaerobic digestion feasibility study. Final Report for the Bluestem Solid Waste Agency and Iowa Department of Natural Resources.

McCarty, P. L., 1964. Anaerobic waste treatment fundamentals. Public Works 95: 107 – 112, 123-126; 11: 91-94; 12: 95-99.

Moser, M. A., R. P. Mattocks, S. Gettier, and K. Roos, 1998. Benefits, costs and operating

Appendix B: Environmental Facts

experience at seven new agricultural anaerobic digesters. Presented at: BioEnergy 98: Expanding Bioenergy Partnerships, Madison,

Wisconsin, October 4-8, 1998. www.powerbase.com/biopower/images/Klaesi_anae

Ostrem, K., 2004. Greening waste: Anaerobic digestion for treating the organic fraction of municipal solid wastes. Master's Thesis, Department of Earth and Environmental Engineering, Columbia University.

Wright, P., S. Inglis, J. Ma, C. Gooch, B. Aldrich, A. Meister, and N. Scott, 2004. Preliminary comparison of five anaerobic digestion systems on dairy farms in New York State. Paper # 044032, presented at the 2004 ASAE/CSAE Annual International Meeting, Ottawa, Ontario, Canada, 1 – 4 August, 2004.



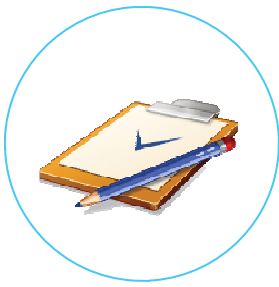
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Plans need to be evaluated and updated regularly to maintain their effectiveness and momentum for implementation. This appendix provides guidance on evaluating the plan and updates.



Appendix C: Plan Evaluation



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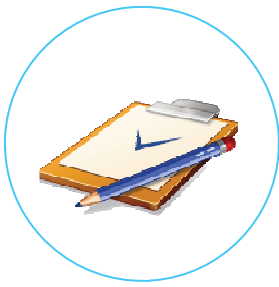
Plan Evaluation

Communities that tend to be most successful in implementing their plans are those that continue to monitor and evaluate progress. Some of the techniques that have worked for communities are:

- Maintaining the steering committee as a plan implementation oversight committee.
- Annual plan commission work sessions to review progress and identify areas for focus in the next year.
- Tying projects identified in the plan to capital improvement plans and annual budgets.
- Celebrate milestones and major accomplishments related to the plan.

Update Guidance

In order to be an effective decision-making tool for the community leaders, the comprehensive plan can't remain static for the entire planning period. Significant changes in the community (such as the location or loss of a major employer) will require evaluation and potentially updates to the plan. Every year the plan should be evaluated, and plans should be reviewed and updated as needed every five years. The comprehensive plan has a planning horizon of 20 years and will need to be revisited by 2030, even if there are regular updates.



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Some of the programs identified in the comprehensive plan merit more explanation and contact information for the people and organizations who will be responsible for implementation. The toolbox is intended to provide that additional information.



Appendix D: Tools





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Indiana Department of Natural Resources Five-Year Parks and Recreation Plan

Submission Guidelines

Introduction

Local park and recreation planners often ask how complete their first draft 5-Year

Parks and Recreation Master Plans should be. IDNR has never provided an

official minimum submission guideline for these initial master plan drafts until

now. This is the new guideline for those first draft submissions.

NOTE: Keep in mind that turning in a more complete draft plan provides

IDNR-OR with:

- More information to work from
- A clearer picture of your planning process
- A more accurate basis for our review checklist
- An opportunity to give more detailed feedback and comments about your plan

First Draft IDNR Parks and Recreation Master Plan Submission Guideline

Most park and recreation planners take between 6 and 12 months to successfully complete an IDNR-acceptable plan. Since the time period between January 15th and April 15th is only three months, the minimum first draft submission is over 1/2 of the plan drafted and in place with new material. This should allow planners a reasonable amount of time to complete the rest of the plan.

This is based on the review checklist from the 2008 IDNR Planning Guidelines for Five Year Parks and Recreation Master Plans. These are the minimum specific completion guidelines for first drafts:

Section of the Plan: Level of Completion



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- Definition of Planning Area: COMPLETE
- Goals of the Plan: COMPLETE
- Park Board/Department Info: COMPLETE
- Natural Features and Landscape: COMPLETE
- Man-Made, Historical and Cultural Features : COMPLETE
- Social and Economic Factors: COMPLETE
- Accessibility and Universal Design: COMPLETE
- Rehab. Act of 1973 Section 504 Compliance Form: DUE April 15th
- Public Participation: PARTIAL
- ONE (or more) methods complete; second or more method(s) in progress is acceptable
- Needs Analysis: DUE April 15th
- Outline potential needs/recreation standards, wait for public participation results before finishing this section
- New Facilities Location Map: DUE April 15th
- Priorities and Action Schedule: DUE April 15th
- Outline potential priorities and actions, wait for public participation results and needs analysis before finishing this section
- Public Presentation of Plan: DUE April 15th
- This is the last step of the actual planning process; complete this after the priorities and action schedule, this is your final public review of the entire completed plan
- Board Resolution Adopting Plan: DUE April 15th

Level of Completion Notes:

COMPLETE means this section must be drafted to include all pertinent new information and data. Please review electronically cut/pasted plan segments from earlier plans to ensure information is accurate and current. Photocopied segments from prior plans are not acceptable.

PARTIAL means that only part of this section is due on the January 15th

1st draft submission deadline to IDNR:

DUE means this is a 'drop-dead' date; no further time for revisions to the final plan is allowed.

(IDNR First Draft Submission Guidelines; 2008 version)

More information available at <http://www.in.gov/dnr/outdoor/2565.htm>



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Toolbox Guide to Development Funds

The Toolbox Guide to Development funds is maintained by the Center for Economic and Community Development at Ball State University. It is a searchable, downloadable, online compilation of the grants, loans, and tax tools available for Indiana communities to use in their economic and community development.

The Toolbox Guide to Development Funds has a description of each program and its associated rules, how other communities have used the tool, the amount of funding available and match requirements, as well as contact information for the agency that administers the program.

The Toolbox Guide to Development Funds is available at <http://www.bsu.edu/cecd/toolbox/>.

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Center for Economic and Community Development
Carmichael Hall 109
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Phone: (765) 285-1588
Fax: (765) 285-4989
cecd@bsu.edu

Center for Economic and Community Development

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Toolbox Guide to Development Funds

The Toolbox Guide to Development Funds is the most valuable and comprehensive listing of Indiana community and economic development funding programs available, and it is offered free on this site. This database is considered by Indiana practitioners to be the foremost reference guide for development finance. Subjects covered include:

- arts, humanities, and human services
- business development
- community and economic development
- environmental development
- housing development
- international development
- parks and recreation
- tax and revenue tools
- workforce development

Format Options

The Toolbox Guide is updated annually. The current version is available in the following formats:

- **Download:** Click the links to the right to download parts of the Toolbox Guide in printable PDF format, which retains the original page formats and fonts. To view these documents, you will need Adobe Reader software (free download).
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Overlay Districts

An overlay district is a “transparent” district that lies on top of the existing zoning. It is typically used to add additional design standards or restrictions beyond those required by the existing zoning. Unless specifically modified by the overlay district, development adheres to the base district (existing zoning). Overlay districts are used differently in different communities, but they generally are used to unify streetscape and architecture without monotony, control traffic problems and signage, and provide for open space and landscaping. Overlay districts do not attract development, but they ensure that the development that occurs is higher quality.

An overlay district is usually used when there is a special public interest to be served that does not coincide with already mapped traditional zones. An overlay district may cover parts of several zones or only a portion of an underlying zone. Generally, the underlying zone determines the permitted land uses, while the overlay district restricts the design, requires additional setbacks, or sets into place any other restrictions that meet the district’s purpose. In cases where there is a conflict between the requirements of the overlay district and the underlying zoning, the overlay restrictions apply (Zoning News, 1991).

Overlay districts are most common for:

- Downtown areas
- Historic areas
- Corridors
- Airport development
- Natural resource areas (rivers, shore lines, etc.)

Some of the other types of overlay districts are:

- Transit supportive (or oriented) development
- Infill
- Pedestrian walkability

In some cases the overlay district may reduce the requirements for setbacks, landscaping, or parking to preserve a specific character



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(such as in a downtown area). An overlay district in some instances will modify the permitted uses of the district in order to preserve or promote the character of the district.

Source: Modified from the I-69 Planning Toolbox

Development Plan Review

Under Indiana Code “development plan” is defined as a specific plan for the development of real property that requires approval by the plan commission, satisfies the development requirements specified in the zoning ordinance, and contains the plan documentation and supporting information required by the zoning ordinance.

Indiana Code goes further to state that a community can specify regulations that development plans must meet. These regulations can include:

- Compatibility of the development with surrounding land uses
- Availability and coordination of water, sanitary sewers, storm water drainage, and other utilities
- Management of traffic
- Building setback lines
- Building coverage
- Building separation
- Vehicle and pedestrian circulation
- Parking
- Landscaping
- Height, scale, materials, and style of improvements
- Signage
- Recreation space
- Outdoor lighting

Indiana Code allows communities to specify in which zoning districts a development plan is required to obtain plan commission approval. Generally, development plan approval is a prerequisite to obtaining any local permits.

The type of review and approval identified in the 1400 series of IC 36-7-4 should be reserved for more complex projects like multi-family developments, commercial and retail establishments, industrial facilities, planned unit developments, and institutional developments.



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Indiana Code states that a plan commission may delegate development plan approval. Delegation may be granted to staff, a hearing examiner, or a committee of the plan commission. The delegation must be clearly stated in the zoning ordinance and include the duties granted to the hearing examiner, the procedures for review, and procedures for an appeal. Many communities take advantage of this streamlined procedure, thus requiring only the most complex plans to be brought before the plan commission.

If development plan review is delegated, it is very important that the review procedure stated in the zoning ordinance be used by the reviewer in exactly the same manner as it would be by the plan commission. Decisions of the reviewer should be documented in exactly the same manner they would be as if decided by the plan commission.

It is also important to note that a development plan decision made by the staff, hearing examiner, or committee can be made without a public hearing if the zoning ordinance provides for an appeal of the decision directly to the plan commission.

Development Standards

Indiana Code identifies a number of development requirements that may be included in the review of a development plan. It is very important that these requirements be “objective;” a project clearly meets the requirement or it does not. These standards must be clearly identified within the zoning ordinance. Often a zoning ordinance will have a development standards section with titles like “parking standards,” “driveway standards,” or “landscape standards.”

The process of review simply involves comparing what is proposed on the site plan to what is required by the standards prescribed in the zoning ordinance. It’s easiest to go through the standards section checking each off after confirming the site plan meets or exceeds them. All dimensions and calculations should be verified and may include

- Yards and setbacks
- Parking spaces and aisles
- Loading dock standards
- Building height and lot coverage

- Density
- Size, spacing, and location of landscaping
- Sign size
- Driveway surfaces, locations and width
- Utility easement locations and dimensions
- Storm water pipes, culverts, and detention facilities
- Sidewalk and bicycle path locations and width

If a site plan fails to meet any of the development standards, the deficiencies should be conveyed in writing to the owner/developer/engineer. Occasionally, it may be necessary for the owner to secure a variance from one or more of the development standards.

Source: Excerpted from the Indiana Citizen's Guide to Planning.



Indiana Right to Farm

The right to farm in Indiana is established in IC 32-30-6-9:

IC 32-30-6-9

Agricultural and industrial operations; findings; continuity of operations; circumstances in which nuisance does not exist

Sec. 9. (a) This section does not apply if a nuisance results from the negligent operation of an agricultural or industrial operation or its appurtenances.

(b) The general assembly declares that it is the policy of the state to conserve, protect, and encourage the development and improvement of its agricultural land for the production of food and other agricultural products. The general assembly finds that when nonagricultural land uses extend into agricultural areas, agricultural operations often become the subject of nuisance suits. As a result, agricultural operations are sometimes forced to cease operations, and many persons may be discouraged from making investments in farm improvements. It is the purpose of this section to reduce the loss to the state of its agricultural resources by limiting the circumstances under which agricultural operations may be deemed to be a nuisance.

(c) For purposes of this section, the continuity of an agricultural or industrial operation shall be considered to have been interrupted when the operation has been discontinued for more than one (1) year.

(d) An agricultural or industrial operation or any of its appurtenances is not and does not become a nuisance, private or public, by any changed conditions in the vicinity of the locality after the agricultural or industrial operation, as the case may be, has been in operation continuously on the locality for more than one (1) year if the following conditions exist:

(1) There is no significant change in the type of operation. A significant change in the type of agricultural operation does not include the following:

(A) The conversion from one type of agricultural operation to another type of agricultural operation.

(B) A change in the ownership or size of the agricultural operation.

(C) The:

(i) enrollment; or

(ii) reduction or cessation of participation;
of the agricultural operation in a government program.

(D) Adoption of new technology by the agricultural operation.

(2) The operation would not have been a nuisance at the time
the agricultural or industrial operation began on that locality.

As added by P.L.2-2002, SEC.15. Amended by P.L.23-2005, SEC.1.



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Indiana Shovel-Ready Program

The Shovel Ready Program lowers the cost of site development, improves efficiency of state permitting and enhances the marketability of the site. Because site information is available before development, potential risks of investing and improving new land are reduced for businesses.

The Goals of the Shovel Ready Program are to:

- Certify sites to expedite the location and permitting processes for business development
- Help local communities identify and prepare sites for economic development
- Identify and fast track the state, federal and local permits necessary for a specific site (dependent on the end user)

The Shovel Ready Program improves the marketability of Indiana communities in the site selection process. Shovel Ready plays a vital role in state economic development by helping companies and communities identify sites that can be rapidly developed. To be Shovel Ready-certified, a site must have undergone an environmental assessment and have been qualified for expedited permitting with state regulatory agencies to allow quick investment and expansion.

Benefits

Shovel Ready lowers site development costs, improves state permitting efficiencies and enhances site marketability. Because site information is available before development, potential risks of investing in and improving new land are reduced for businesses.

How It Works

The Indiana Economic Development Corporation administers Shovel Ready and uses the Fast Access Site Team (FASTeam) to deliver fast-track permitting at the state level. Shovel Ready sites are certified by the FASTeam, which is composed of representatives from the Indiana Economic Development Corporation, Governor's Office, Indiana Department of Natural Resources, Indiana Department of

Environmental Management, Indiana Department of Transportation, Indiana State Department of Health, Indiana State Department of Agriculture and the Indiana State Department of Homeland Security.

Minimum Standards for Certification

- Executive level community support (Mayor, County Commissioner, Town Council President) demonstrating a local commitment to expedite, when necessary, local permitting
- Ownership of property clearly identified; property should be owned or optioned by local economic development organization, local unit of government, developer, end user or utility
- Sufficient infrastructure in place
- Identification of water bodies and receiving streams at the site, including having a Waters of the State determination
- Topography maps associated with the site
- Environmental assessment of property complete through Phase I, and if indicated, Phase II



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